

Protests, Reflecting Turmoil in U.S. Church, Await John Paul

NEW YORK — People who admire Pope John Paul II, people who do not, and people who see a chance to make a buck have all geared up for the pope's 10-day cross-country tour, which begins Thursday when he steps off a jetliner called "Shepherd One" at Miami International Airport.

For millions, the U.S. tour will be a peak of their spiritual life, a chance to see the Holy Father, the successor to Peter, the leader of 840 million Roman Catholics around the world.

People angry with the pope are also preparing for his visit.

Women, priests, homosexuals, blacks, Hispanics and other groups of Catholics are planning to let the pope know what is on their minds, through demonstrations or through prepared statements.

Several minorities within the church, such as black and Hispanic Catholics, feel the church needs to be more sensitive to their cultures and give them a larger voice.

The messages all these groups plan to deliver reflect the turmoil within the broader American church.

Large numbers of the United States' 32 million Catholics disagree with the church's stands on birth control, homosexuality and the ordination of women, among other issues.

The pope is unquestionably aware of such grievances, but the groups see his visit as a special opportunity to dramatize their messages again.

Women's groups have already started demonstrating at the Vatican's diplomatic mission in Washington. These protests will continue in Washington and along the pope's route.

Homosexual rights groups in San Francisco will demonstrate against the Vatican's 1986 statement that homosexuality is "an intrinsic moral evil."

Jews not mollified by the meeting Sept. 1 in Rome between Jewish leaders and the pope are planning protests in Miami and San Francisco.

Meanwhile, entrepreneurs have blanketed the papal route with "I Saw Pope John Paul" T-shirts and buttons, as well as more unusual fare, such as a \$55 lawn sprinkler in the shape of the pontiff ("Let Us Spray") and \$1.79 pope masks, complete with miter.

One national organizer estimates that 20 million

people will see the pope at motorcades, football stadiums, auditoriums and cathedrals.

In Florida, the pontiff's one-day stay, which includes a few minutes with President Ronald Reagan, will cost, at a conservative estimate, \$5.5 million, or nearly \$4,000 a minute, church officials say. Archdiocese spokesmen say the only public money involved is for security.

For those making the preparations, the trip is a logistical nightmare, covering 9 cities in 10 days, as well as a quick excursion into Canada's Northwest Territories.

Highways will be turned into giant parking lots. Office workers will be sent home early. Schools will be shut for the day. Field hospitals will be set up by the dozens, water stations by the hundreds and portable toilets by the thousands.

John Paul, in his effort to reassert the orthodoxies of the Roman Catholic Church, has made his views known on most of the issues that have been roiling for years inside the American church. But that does not deter many of the groups that await him.

"We believe essentially that the church can change and the pope can change, and that the pope will be open to ideas if we can get his attention," said Sister Jeanine Grammick, a member of the board of the Coalition of American Nuns, who has been urging the church to ordain women as priests.

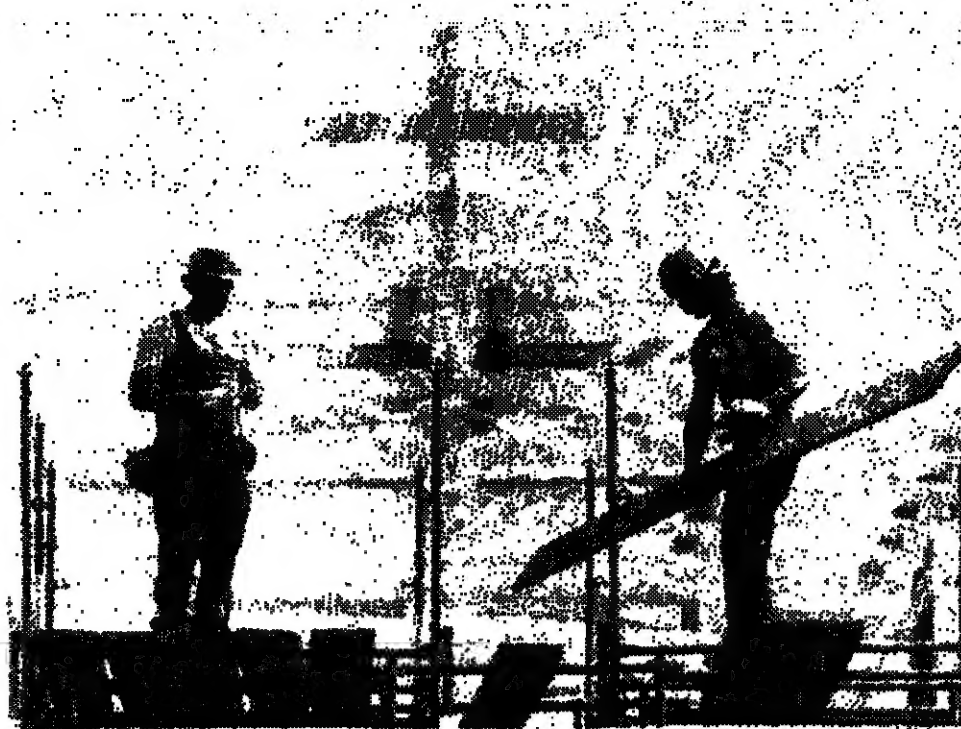
"If you take the long historical view," she added, "you realize that the church has changed over the centuries, but it takes a long time."

The status of women in the church is one of the most widely debated issues among American Catholics. A sizable number of American Catholic women, perhaps a majority, say they are displeased that women are excluded from key roles.

The church teaches that Jesus, whose apostles were men, reserved the priesthood for men.

"Women's ordination is the crucifix of a lot of issues," said Sister Jeanine. "We can't be in decision-making in the church because that's closed to you."

Mary E. Hunt, a theologian who is co-director of Women's Alliance for Theology, Ethics and Ritual, argues that because women are excluded from the priesthood, their experience cannot be brought to bear on the church's positions on abortion, birth control



Workers in Hamtramck, Michigan, preparing for the pope's visit to the Detroit area.

and surrogate motherhood, all of which the church opposes.

In San Antonio, Los Angeles and Miami, the pope will be seen by large numbers of Hispanic Catholics. The Reverend Vincente O. Lopez, associate director for Hispanic Affairs of the national bishops' conference, says a primary concern is the success that Pentecostals, evangelicals and other Christian groups are having in proselytizing among the 17 million Hispanic Catholics in the United States.

Ethnic sensitivity is also a dominant issue for the nation's 1.3 million black Catholics. James P. Lyke of Cleveland, an auxiliary bishop, says blacks are trying to win acceptance of traditions including hymns borrowed from black Baptists and a more emotional worship style.

Other concerns of black Catholics include a desire for more black priests and bishops. Among the nation's 11 black bishops, only one, Bishop Joseph L. Howze of Biloxi, Mississippi, heads his own diocese.

Reagan, Rousing Finish In Mind, Lists His Goals

By Martin Tolchin
New York Times Service

WASHINGTON — President Ronald Reagan, saying he wants to end with "a good curtain call," has outlined his agenda for his remaining 16 months in office. He set as his primary domestic goal the Senate's confirmation of Judge Robert H. Bork to the Supreme Court.

At a meeting Tuesday of senior administration officials, Mr. Reagan said that his other priorities included an arms control agreement with the Soviet Union, the restoration of "true democracy" in Nicaragua, a budget-balancing constitutional amendment, the right to veto specific budget items while approving the rest of a bill and an "economic bill of rights" that would stress turning over some government activities to the private sector.

The president was silent, however, on some topics at the heart of the conservative agenda on social issues.

These include a proposed congressional ban on federal funds for abortion, a constitutional amendment to allow officially sponsored prayer in public schools and a revision of welfare laws that would give

the states greater latitude in administering funds.

Mr. Reagan said he hoped that the rest of his term would reflect a show-business maxim: "The whole philosophy was, when you come to town, open big. And now, well, it's time for an even bigger finish, and a good curtain call."

"On the domestic side," he said, reading from a prepared text, "we face one more important task, and no more important task, I should say, than securing the confirmation of the Supreme Court of Judge Robert Bork."

Mr. Reagan predicted "a tough fight" but said, "I'm convinced that in the end he will be confirmed."

The president was equally emphatic about his commitment to continued aid to the rebels fighting the government in Nicaragua, despite opposition on Capitol Hill.

"We will not accept a mere semblance of democracy," he said. "We got to this point through efforts of the over 15,000 freedom fighters struggling, and some of them dying, for freedom for their country."

The president noted that the United States was engaged in "intensive negotiations" with the Sovi-



Prime Minister Ingvar Carlsson of Sweden met Wednesday with President Reagan, the first visit by a Swedish leader to the White House since Tage Erlander in 1961.

et Union on arms control, which he said "hold out the hope of actually ending both sides' nuclear arsenals."

Marlin Fitzwater, the White House spokesman, said it is "very

likely" that Eduard A. Shevardnadze, the Soviet foreign minister, will meet with Mr. Reagan when he comes to the United States later this month for a meeting with Secretary of State George P. Shultz.

As U.S. Air Fares Rise, Fear of Price-Setting

By Agis Salpukas
New York Times Service

NEW YORK — The U.S. airline industry, buoyed by a surge of passengers, has put through an unusual number of fare increases while tightening restrictions on discount fares this year.

Many airlines are increasing ticket prices, instead of lowering them as they usually have done, after the Labor Day holiday in early September.

Government officials, analysts and other experts fear that the top eight carriers are beginning to act like a price-setting oligopoly. That is the opposite of the outcome envisioned when the airline industry was deregulated in 1978.

The large airlines have come to control pricing in major markets in a way that few foresaw when the industry was deregulated, said Elizabeth E. Bailey, dean of Carnegie-Mellon University's Graduate School of Industrial Administration and a former vice chairman of the Civil Aeronautics Board.

"Customers are not getting enough choice" in fares at the "hub" airports controlled by the big airlines, she said.

Alfred E. Kahn, former chairman of the Civil Aeronautics Board and a strong supporter of deregulation, is also worried.

"There seems to be sufficient conflict of interest among the various carriers and differences in their strategy that you are not getting monopoly pricing, but it certainly bears watching," he said.

Several airline executives declined to discuss pricing. One who would, however, scoffed at the notion that the industry was acting like an oligopoly.

"I wish I could believe that," the executive, who asked not to be identified, said with a laugh.

All major airlines were charging \$290 in April for regular one-way coach fares between New York and Chicago; it is now \$310. The lowest regular discount fare on that route was \$99; it is now \$109 and is to rise a further \$10 by Oct. 3.

Feeding the fears of those concerned about oligopoly pricing is the number of mergers in the airline industry in the last two years. In 1986, 12 major carriers controlled 85.5 percent of air travel. Now eight account for 94 percent.

They are Texas Air, parent of Continental and Eastern; United; American; Delta; Northwest; USAir; TWA; and Pan Am.

The mergers have created a handful of airlines with route systems that dominate most major hubs. American, for example, handles 63 percent of traffic at Dallas-Fort Worth International Airport.

Northwest controls 81 percent of flights at Minneapolis-St. Paul International and 64 percent at Detroit's Metropolitan Airport. USAir holds 84 percent of the Pittsburgh market and 59 percent at Baltimore-Washington.

People Express, the upstart carrier whose unrestricted low fares forced other airlines to keep prices low, was folded into Continental Airlines this year. Many other small carriers founded during the early years of deregulation have also disappeared.

For several years, Continental, which has lower operating costs than other big airlines, mainly because of lower labor costs, also offered low fares. But this year Continental has generally supported the increases of other airlines, or initiated higher fares itself.

Restrictions on most discount fares have continued to mount. As recently as April, for instance, airlines required that travelers buy the nonrefundable Maximizer fare, the lowest discount fare, 2 days in advance. The period is now 7 days and will go to 14 days by Oct. 3.

Most major carriers said last week that they would raise their lowest discount fares \$10 each way and increase the advance-purchase requirement from 7 days to 14. On Tuesday, American announced that it would raise one of its most widely used discount fares, United and Delta immediately followed suit.

The airlines have benefited from strong demand this year, and bookings for September and beyond are stronger than usual. That has put the industry in a good position to hold the line on regular fares and raise discount fares.

Some analysts believe there will not be sweeping fare cuts for some time.

"We are at a watershed for the industry," said Helene Becker of Shearson Lehman Brothers. "There is more pressure on them now to raise fares."

The airlines, she said, have cut their costs about as much as they can by extracting concessions from their workers, buying more efficient planes and trimming other expenses. Moreover, most of the leading carriers have put in big orders for new planes, about \$25 billion worth in total.

There are other reasons fares are more likely to go up than down, analysts say. One is the growing concern about flight delays and other service problems, which may cause the government to force reductions in the number of flights at major airports.

Israeli Says Arafat Seeks Direct Talks

GENEVA (Reuters) — In what would appear to be a radical policy change, the Palestinian leader Yasser Arafat is ready to enter direct peace talks with Israel, a member of the Knesset, Israel's parliament, said Wednesday.

"He said he is ready to enter direct negotiations outside an international conference," the leftist legislator, Charlie Biton, said in Geneva, where he and two associates met Monday night with the Palestine Liberation Organization chairman.

Mr. Arafat asked Mr. Biton to give Israel a message outlining three conditions for direct talks, Mr. Biton said. He did not reveal the conditions. As recently as Monday, addressing a United Nations gathering in Geneva, Mr. Arafat continued to demand that talks be conducted at a multinational peace conference with the PLO as a full delegate.

In Jerusalem, a spokesman for Prime Minister Yitzhak Shamir said Mr. Shamir saw the message as a propaganda exercise. Aides to Foreign Minister Shimon Peres, who has clashed repeatedly with the hard-line prime minister over whether to agree to a conference that would include the PLO, said he would not accept any message from Mr. Arafat.

South Korea Labor Picture Improves

SEOUL (WP) — Labor unrest appeared to diminish Wednesday throughout South Korea as workers returned to the assembly lines at Daewoo Motor Co., one of the nation's biggest companies.

Government officials said strikes continued at 269 companies, down from more than 600 at the end of last week. Most of the companies affected were small and had few employees. Every day this week, more disputes were resolved than broke out at new locations, officials said.

One potentially explosive dispute, at the Hyundai shipyard in Ulsan, remained unresolved. Thousands of workers held a sit-in to protest the company's closing of the shipyard and refusal to negotiate further on wages.

Ex-President of Congo Is Arrested

BRAZZAVILLE (AFP) — The former Congolese president, Joachim Yhombi-Opango, who was ousted in 1979, has been arrested for questioning. Information Minister Christian Gilbert Bembet said here Wednesday.

He gave no more details, but the detention follows a weekend army raid in northern Congo on the hideout of rebels loyal to General Yhombi-Opango, who has been living under house arrest in his home town of Owando, 310 miles (530 kilometers) from the capital.

Pierre Anga, a rebel leader and a former captain, was reported to have put up roadblocks around Owando. He and several fellow tribesmen escaped after the raid, which left four dead, two of them soldiers, and six seriously wounded, officials said.

Mercedes Dismisses Black Strikers

EAST LONDON, South Africa (Reuters) — Mercedes-Benz of South Africa Ltd. dismissed 2,800 black workers Wednesday for defying an ultimatum to end a five-week strike that has stopped local production of the luxury cars.

The National Automobile and Allied Workers' Union was demanding a 43 percent wage increase, and it rejected a last-minute management offer of a 15 percent raise.

In Cape Town, Denis Worrall, the former South African ambassador to Britain, said Wednesday that he had met representatives of the banned African National Congress last weekend during a visit to Zimbabwe. Mr. Worrall quit his diplomatic career to run against the ruling National Party in the whites-only general election in May, pushing for faster reform of apartheid laws. He was narrowly defeated.

Kanak Leader Cites Libya as Model

NOUMEA, New Caledonia (Reuters) — A Kanak separatist leader suggested Wednesday that Libya was a possible model for an independent New Caledonia, the French territory in the South Pacific that will vote on independence in a referendum Sunday.

Yann Célestin Urges, leader of the Kanak Liberation Front, said, "It is the organization of the Libyan people that interests us. The system can be easily adapted here." Mr. Urges' faction is part of the separatist Kanak Socialist National Liberation Front. The front is boycotting the referendum, which it says gives too little weight to indigenous Melanesian islanders, or Kanaks, who constitute 43 percent of the population.

Meanwhile, Noumea, the New Caledonian capital, was adorned with French flags Wednesday as 25,000 loyalists staged an election rally proclaiming their allegiance to France.

For the Record

Richard Speck was denied parole Wednesday by the Illinois parole board, 21 years after he killed eight nurses in a Chicago apartment. (AP)

President Oscar Arias Sanchez of Costa Rica, who will visit Washington Sept. 22 to meet with the speaker of the House of Representatives, Jim Wright, will probably also confer with President Ronald Reagan, the White House said Wednesday. (AP)

Prime Minister Jacques Chirac served notice Tuesday that a proposed law to make it harder for the children of immigrants to acquire French nationality will probably be shelved until after next year's presidential poll. (Reuters)

The south Yugoslav University of Skopje has introduced mandatory AIDS tests for foreigners, university authorities announced Tuesday. About 15,000 foreigners study in Yugoslavia annually, mostly from the Third World. (Reuters)

TRAVEL UPDATE

4 Die in Highway Crash Near London

LONDON (AP) — Two buses, one of them taking tourists on a day trip to Windsor Castle, crashed Wednesday afternoon in a multi-lane pileup on a highway near London's Heathrow Airport. The police said four persons were killed and 75 injured.

The accident occurred on the six-lane highway linking London and Heathrow and western England. Wreckage blocked the highway in both directions. A police spokesman said two buses, a truck and three cars were involved.

Press Association, the British domestic news agency, said a witness reported that the pileup occurred when one of the vehicles tried to make a U-turn near a service area.

Passengers on the Stockholm subway will be banned from carrying marker pens and spray paint in a move to eliminate graffiti, public transport officials said Wednesday. Violators will be fined 1,000 kronor (\$158) when the ban takes effect Sept. 15. (Reuters)

Correction

Because of an error by The Associated Press, the obituary of Sir William Haley in the International Herald Tribune on Sept. 8 mistakenly said he had been educated at Cambridge University in England and Dartmouth College in the United States. In fact, he held honorary doctorates from both but had been a student at neither.

Scholars Likely to Get Access to UN Files on Nazis

By Paul Lewis
New York Times Service

UNITED NATIONS, New York — The United Nations files containing Nazi war crime accusations collected at the end of World War II are expected to be opened later this month to historians and researchers, according to diplomats and UN officials.

The officials said that Secretary-General Javier Pérez de Cuellar would probably make this decision at a meeting Sept. 22 and 23 with representatives of the 17 former member countries of the War Crimes Commission.

The commission was established in London in 1943 and completed its work in 1948. It compiled thousands of dossiers about charges of Nazi war crimes in Europe.

But much of the material is in the form of raw accusations. The Nu-

remberg war crimes trials of major Nazi figures did not rely on these files but on its own research, historians said Tuesday.

In the past, diplomats say, many member governments have wanted to restrict access to the files, arguing that they contain unsubstantiated and probably false accusations.

The opening of the commission's archives would represent a diplomatic victory for Israel, which has been pressing the secretary-general to declassify the files. They have been accessible only to governments on a confidential basis.

Over the last year, the Israeli government has been allowed to start a search of the War Crimes Commission archives.

So far, Israeli officials have copied about 2,300 files and reviewed roughly half this number. In

March, Israel made public its preliminary findings from an initial investigation of 300 files.

According to officials with access to their findings, Israeli researchers have turned up staff lists for several Nazi concentration camps, details about Gestapo courts and evidence that in 1944 the Allied leaders in London knew about the Nazi program of mass killing of Jews and others in camps but did not try to stop the executions by bombing the camps.

A file on former Secretary-General Kurt Waldheim was discovered in the collection last year. Mr. Waldheim, who is now president of Austria, served during World War II in German Army units that were implicated in the deportations of Jews in Greece and reprisals against partisans in Yugoslavia.

The more than 40,000 files compiled by the War Crimes Commission are now stored in Manhattan. The material contained in these files was not used for prosecutions at the end of World War II, UN lawyers point out.

Sometimes, they say, the information was considered insufficient, and sometimes the accused or material witnesses could not be found

in the chaotic period at the end of the war.

Some lawyers, therefore, compare the archives with regular police files on suspects. They say that since a prosecution was not undertaken at the time the material was compiled, the information in the files should be strictly controlled to safeguard the personal privacy of the named individuals.

The former War Crimes Commission members, except for Poland and France, have indicated that they favor wider access to the files, though there are differences among them over how broad this access should be.

The archives contain more accusations of war crimes committed in France than in any other country, according to diplomats.

The other members of the commission are Australia, Belgium, Britain, Canada, China, Czechoslovakia, Denmark, Greece, India, Luxembourg, the Netherlands, New Zealand, Norway, the United States and Yugoslavia. South Africa was originally a member but dropped out soon after the commission was formed.

Mr. Pérez de Cuellar has indicated that he is ready to grant liberal access to the files if he finds evidence that a clear majority of the 17 former commission governments desire it, diplomats report.

Vietnam Jails General In a Corruption Affair

Agence France-Press

HANOI — A military court here has imprisoned the commander of Haiphong, Vietnam's largest port, for 20 years for illegal trading and speculation, the party newspaper Nhan Dan said Tuesday.

General Nguyen Truong Xuan, two colonels and 18 other military men had run an illegal operation that involved using part of his command's budget for trading in imported consumer goods, loaning money at high interest and dealing in rationed products, the paper said.

Canada wants the secretary-general to retain ultimate control over the archives, although it favors easing the rules of access to them.

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Mr. Hart was interviewed by Ted Koppel on the ABC News program "Nightline." It was his first television interview since May.

In the interview, the former Colorado senator seemed to hedge

Hart Says He Doesn't Plan to Revive Candidacy for '88 Presidential Race

By E.J. Dionne Jr.
New York Times Service

WASHINGTON — Gary Hart has said that he has "no plans" to re-enter the 1988 presidential contest, but that he intends "to try to have an impact" on the political process.

Mr. Hart also acknowledged Tuesday for the first time that he had been unfaithful to his wife and said he assumed "total responsibility" for the actions that forced him to withdraw his candidacy for the Democratic presidential nomination.

He ended his candidacy in May following news reports that he had spent a weekend with Donna Rice, a 29-year-old actress and model.

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N.Y. Industry Said To Accept Payoffs As 'Necessary Evil'

New York Times Service

NEW YORK — A large segment of New York City's construction industry willingly accepts domination by organized crime as a "necessary evil" that promotes stability and profits, a state report asserted.

The report by the state's Organized Crime Task Force marks the first time that a government agency has warned that management and labor in the city's multimillion-dollar industry have accommodated themselves to racketeering.

The administration of Governor Mario M. Cuomo has withheld the report at the request of a U.S. judge presiding in a racketeering trial, but a copy was obtained by The New York Times.

The presence of organized crime in the industry, the report said, "is to a large extent, accepted by developers, contractors and suppliers — in some instances as a necessary evil, providing stability and predictability."

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Status Quo for Germans

He will work, however, as have his predecessors, to increase tensions between the two states. Just on that score, having Mr. Honecker visit is a plus for Mr. Kohl.

As for Mr. Honecker, he is received at last in West Germany as the head of an independent sovereign state — and by the leadership of Mr. Kohl's conservative party, which would not long ago have dismissed the idea as apostasy.

Like many matters German, the visit evokes powerful feelings elsewhere in Europe and the world. Some see the visit as the fruit of Mikhail Gorbachev's plotting to woo Bonn away from the West. Although Moscow certainly courts Bonn, the Russians have more reasons than anyone to resist a unified Germany. These include the same German bellicosity, in war after war, that has frightened the French, plus an aversion to the instability that German reunification would bring to already shaky Eastern Europe.

While a few Westerners work up fears over the visit, most will hardly notice. Mr. Honecker may come to West Germany, ruffle some feathers with talk of German disarmament and get his own feathers ruffled over the Berlin Wall. Then he will go home and things will go on much as before, with West Germany neither neutralized nor swallowed whole. A divided Germany, like the Atlantic alliance, has become part of the furniture.

—THE NEW YORK TIMES.

mor. Retaliating against the recent thrust into Libyan territory by Chad, Libya set out to bomb Chad capital of N'jamena, 1,000 kilometres (600 miles) from the border. The French air defence forces shot down one of the bombers, whereupon the Libyans denounced them with the effrontery to "resist" its bombers. In fact the French have been careful to limit their mission in Chad; they did not approve of the reconquest of Aozou and separated themselves from Chad's insud-out incursion into Libya proper.

In matters involving Colonel Gadhafi, it is prudent to be wary. He has not been altogether reduced to size. But the fact is, it has been downhill for him since the United States responded to his association with international terrorism and launched its air attack of April 1986. Chad added useful insult to this injury. To be bombed by a great power was one thing, although there was for Libya the additional sting of having the act condoned by most of those it had expected to protest. To be humiliated by a seemingly puny and helpless victim is quite another thing. Other countries he has dispossessed, mesmerized and intimidated will notice.

—THE WASHINGTON POST.

danger. The Federal Reserve Board's job is to preserve the dollar from those twin threats, inflation at home and a falling exchange rate abroad, each of which aggravates the other. Even after Friday's increase in rates, Mr. Greenspan has no margin for error. The consumption boom has brought unemployment down much faster than most people expected at the start of the year: it is now 6 percent of the labor force and probably cannot go much lower without beginning to generate wage inflation.

If the whole job of restraining inflation is left to Mr. Greenspan, interest rates will have to go a good deal higher. They are his only weapon. He will have to let them go high enough to chill consumption by Americans and to persuade foreigners to keep investing in the United States. That certainly would risk a recession.

Both President Reagan and the congressional leadership need to keep that in mind as they come back to Washington and return to their unfinished budget. They share the responsibility to work out a rational compromise, but the greater part of that responsibility is Mr. Reagan's. He is, after all, the president. If he fails, and budget policy is left to the automatic pilot, Mr. Greenspan's decision on Friday suggests the direction he is likely to take.

—THE WASHINGTON POST.

could bully with impunity. But Mr. Ings turns out to be a professional, one of five full-time umpires *po'w on the town*. He gave Mr. McEnroe a warning and when that didn't work he assessed him a penalty point and eventually took away a full game and the set. Under the rules, the next outburst would have cost Mr. McEnroe the match. Wonder of wonders, he shut up. Detente? No. He also began to play better tennis, and eventually won. Mr. Zivojinovic applauded him as they came to the net to shake hands. The show of good sportsmanship was jarring in the contrast it provided.

Mr. McEnroe will apparently be suspended for two months. That will interrupt a comeback and could hurt his career. No one is sure if it is a suicide letter, but the lesson is only by being nice. Good messages in the language of behavior they tolerate.

—THE WASHINGTON POST

ON TOP OF ALL THAT, YOU'RE GERMAN!

'Look at the bright side. You fly into Red Square, you make their defense system look ridiculous, you infuriate the military and everyone else — and you still only get four years!'

ante but eloquent approach to the unwelcome. Can we not show as much solicitude for human rights in Haiti as our liberals show for human rights in El Salvador and our conservatives for human rights in Nicaragua? Can't we do something to avert a catastrophe unfolding on our doorstep?

The answer is not easy or obvious, but that does not excuse reluctance to confront the question. No one wants to return to a United States military occupation. But how about a multinational rescue mission undertaken through the Organization of American States or the United Nations?

Humanitarian intervention has status in international law. What Haiti needs is some form of disinterested international trusteeship to restore a framework of order within which recuperation, development and democracy might become possible. Let us at least pay attention to the problem, recognize its growing urgency and think hard about what might be done.

The writer, a Pulitzer Prize-winning historian and biographer and now professor of the humanities at the City University of New York, was a special assistant to President John Kennedy. He contributed this comment to *The New York Times*.

to have the genocide charge taken up. The Court will force the rest of the world to take responsibility more clearly. It will not to recognize any regime as the legitimate government of a country, as is the situation with the Khmer Rouge in Cambodia and the Poles in Poland and the Angolans in Angola.

Will the genocide convention if it is adopted? When it was negotiated in 1948 it was seen as the embodiment of a national commitment that never shall an unspeakable atrocity as happened to go unpunished.

Will governments can initiate action before the Court? The Cambodian protest group is demanding that the Court be asked to bring the Pol Pot case before the Court. The Western and Southeast Asian countries and the European Communities are considering it. Australia has said it may initiate the action if it has the support of at least one Southeast Asian country should have the unequivocal support of the rule of law.

Will believing will not solve Cambodia? Cambodia will not solve Cambodia any more than it would bring Cambodia to the Court merely to punish the Cambodians. The Western governments should face the appalling situation into which Cambodia has been transformed and can recognize a government that has committed genocide?

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by high interest rates could push some of these over the brink.

Mr. Kaufman's lament was underlined by a recent report of the Congressional Budget Office showing that "a large number" of savings and loan institutions "are still extremely weak."

For the Federal Reserve, the dilemma is ever present. If the central bank succeeds in reversing the dollar's decline, the only way left to attack the trade deficit will be through a deep downturn that cuts the buying power of American consumers. Thus the influential move of Mr. Greenspan's Fed offers no reason to cheer. If it achieves the stated objective, it can bring equal or severe problems in its wake.

The Washington Post.

is clearly legitimate to worry, as does the stock market, that higher interest rates will be a drag on the economy. As the economist Henry Kaufman said in recent congressional testimony: "Our financial system is going astray. Many deposit institutions are weak, and businesses and households have assumed massive

1912: Bulgarians Killed

By William Safire

WASHINGTON — Throughout the United States government, the cause of Israel has suffered a steep decline in the last year. A Department of Defense report prevails at the top, and a publication prevails at the bottom: Israel's bid for technological independence in the international arms market. The United States, which had been paying the bills for developing the Lavi fighter, forced the Israeli cabinet to bow to the inevitable.

At the State Department, the stain of Syria's Hafez al-Assad is rising. The most potent and implacable of Israel's enemies is no longer being exposed as the center of terrorism; instead Damascus is being courted as Foggy Bottom's new ally. The regime had turned over a new leaf.

At the National Security Council in the White House, the decision was made to support Arab Iraq against Persian Iran in the Gulf war — a strategy bitterly opposed by every visiting Israeli cabinet official.

What is the reason for the fall of Israel influence? Some point to the backlash from the Iran arms-for-hostages swap, or to the ascendance of the Arab-leaning nations around the security adviser, Frank Carlucci. Others find the cause in the two-headed

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Two front-page articles on the economic problems of Mozambique and South Africa, the country of South Africa was mentioned only once.

The report "Rebelling Leaves Mozambique a Sinking Country" fails to mention South Africa at all in discussing the threat to the destroyed Mozambique's economy. It calls a "civil war" what is in actual fact a revolt against the government of South Africa using guerrillas. Without the support of South Africa, the Mozambique National Resistance, Renamo, would not exist. In spite of this, however, manage to report Cuba, the Soviet Union and East Germany as supporters of Mozambique.

In the other article "Oil Money: Shields from Fossil of Justified Reality," sees the notion South Africa exists, but also indicating that South African jet forces are making repeated attacks on Angola. Once again we read of a "war" and not of an organized campaign of destabilization by South Africa.

RANDALL ERICKSON.

Moscow's Decisive Opening the Door

By William J. Broad
New York Times Service

MOSCOW — Although possibly providing new ammunition for those who charge it with treaty violations, the Soviet Union has taken a surprising step of opening a top-secret radar installation in Western inspection to show readiness for an East-West accord at a critical time in arms control.

The Kremlin, in making its decision to open its Krasnoyarsk site to international negotiation over the controversial secret to keep the

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the half-parity "stepped array" radar station built in 1972, anti-ballistic missile technology, and Washington has offered this as one of the more convincing examples of Soviet cheating in the arms race.

In spring the installation for the Moscow-based radar station was put in the ground, but it has made itself seem irrelevant in resolving the radar issue than in making the ABM treaty.

A clear political risk is that the administration might ignore the bid for a dialogue and instead focus on the new Krasnoyarsk radar as evidence to back up its charges.

If the inspection indicated, however, that the worst fears of American experts about the site are unfounded, the half-parity radar would raise questions about Moscow's sincerity. To the letter of the treaty, the inspection suggests that the site is more benign than that it is potentially a source of early-warning radar rather than a hardened target.

[illegible]

OPINION

Foes of Smoking on Airliners Are Right

By George F. Will

WASHINGTON — I have never seen Richard Longshore, but I like to imagine that the California assemblyman is ruggedly built for the physical defense of liberty and freedom from the rhetorical defense of it. During the debate on a bill to ban smoking on public transportation in California, the chain-smoking legislator said: "I think this is really a civil rights issue. First you say, 'Smokers get to the back of the bus.' And now you're telling smokers to get off the bus."

This was not received politely by anti-smoking activists. They increasingly resemble the man, as essayist Joseph Epstein says, could not be described as inebriate because he was so intensely inebriated.

But opponents of smoking on airlines are right. The science is clear and so, therefore, is the ethics of the matter. The most hazardous aspect of air travel, aside from the drives to and from airports, is breathing cabin air. Inhalation of smoke by smokers is America's largest single preventable cause of death and disability. For nonsmokers closely confined with smokers, as happens in airplanes, smoke exhaled by smokers is bad. Even worse is "secondhand smoke" that comes from a cigarette's burning tip between puffs. The temperature of combustion is then lower than during puffing and produces more pollutants.

Smoking on airplanes intensifies in bursts when the "no smoking" light goes off, producing high concentrations of pollutants. The separation of smokers and nonsmokers in planes in which air is recirculated does little to protect nonsmokers. Carbon dioxide and carbon monoxide, both increased by smoking,

accumulate in the dry cabin air. To counter the effects of "passive smoking," a passenger needs 50 to 75 cubic feet (1.4 to 2.1 cubic meters) of clean air per minute. You generally get a maximum of 20.

Fight attendants inhale smoke at the rate of a person living with a pack-a-day smoker. They are starting to file workers' compensation claims and suits about ailments caused by long-term exposure to cabin smoke. The legal vulnerability of airlines will increase after forthcoming studies of the metabolized residue of nicotine in nonsmoking flight attendants.

Smoking increases maintenance costs. Tar from smoke — up to 200 pounds (90 kilograms) a year — clogs valves and instruments. A 10-year-old jumbo jet burns thousands of extra gallons of fuel a year because of the weight of the gunk.

Dick Durbin, an Illinois Democrat, showed through the House a measure that would ban smoking on flights of two hours or less — 80 percent of domestic flights. His measure would do this good deed by denying development funds for airports that permit landings of airplanes that allow smoking on such flights. Mr. Durbin had to use an appropriations amendment rather than a straightforward prohibition on smoking because a prohibition would have had to pass the Public Works and Transportation Committee.

That committee is chaired by an opponent of Mr. Durbin's measure, Jim Howard, a New Jersey Democrat who, Mr. Durbin says, has been a heavy smoker and is fighting the habit, but

believes that two-hour smokeless flights would be too much to ask for smokers.

Mr. Durbin's measure barely passed (198-193), even though the organization representing flight attendants endorsed it. The tobacco lobby enlisted the outdoor advertising lobby (the folks who put the Marlboro man between you and the scenery) in opposition. Both were joined by the pilots, ostensibly worried about crashed smokers causing fire in lavatories.

Some pilots may want to smoke. A more important reason, says Mr. Durbin, is that the pilots do not want to offend the senator who chairs the Commerce Committee's aviation subcommittee — Wendell Ford, of tobacco-growing Kentucky.

Mr. Durbin's measure, and a more comprehensive ban favored by Utah's Senator Orrin Hatch, face the formidable opposition of North Carolina's Jesse Helms. He presumably will manage to support tobacco interests without presenting himself as the Martin Luther King of downwind smokers.

In American arguments the language of fundamental rights is as thick as the smoke in airplanes. In 1905, Pennsylvania's governor vetoed restriction on public spitting. "It is a gentleman's right to spit," he said. "Spitting, a once sacred right now long since abridged, is only obnoxious and unhygienic. Smoking inflicts on nonsmokers 84 known carcinogens."

Then, you cannot swing a cat by the tail these days without banging its head against someone who wants to regulate or ban behavior that he disapproves of. But the anti-smoking movement is merely self-defense by innocent bystanders.

Washington Post Writers Group.



Titanic: Back to the Spot Where the 1,500 Froze

By William F. Buckley Jr.

A BOARD L'ABELLE SUPPORTER

THE tender vessel is bound for the spot where the Titanic sank on April 15, 1912. It carries aboard, from the little French island of St. Pierre just south of Newfoundland, half a dozen of the entrepreneurs who make up the U.S. end of the expedition devoted to lifting from the floor of the ocean, down 3,800 meters (almost two and a half miles), artifacts and memorabilia from the Titanic.

There is the tension one might expect in returning to the business of diving deep into the ocean, deeper by far than any submarine can travel. And there is

MEANWHILE

additional tension. Although all the tradition of salvage adamantly affirms that the operation could proceed with the kind of self-assurance one associates with the salvage operation that in years gone by have found gold and diamonds and frankincense and myrrh off Bermuda, Florida, Peru and indeed everywhere in the world where storms or pirates have sunk boats loaded down with treasure — despite all this, there is something different about the Titanic.

Although it has been 75 years since it went down and there are now only half a dozen survivors of the haunted night, the Titanic is widely thought of as an international monument, incorruptible in its chaotic arrangements on the ocean floor. For this reason, great tenderness is being shown toward the White Star Line's glamorous, ill-starred vessel. There has been no mishandling of the ghostly carcass, the forward end of it separated from the stern and by half a mile.

During the preceding six weeks, divers in the tiny submersible with its prehensile arms and manipulator front have brought up only loose-lying artifacts that would otherwise continue to rest on the ocean floor. Where these will finally end it is too early to know.

There is pressure from French museums. (France has been the principal partner of the U.S. enterprise.) And the U.S. situation is complicated by a bill of Senator Lowell Weicker forbidding any memorabilia from the Titanic from being brought into the United States with an eye to "profit." This presumably means that if the Metropolitan Museum in New York were to judge artifacts from the Titanic as being of historical interest, even as artifacts from the Argonaut are redemptive to human curiosity, it could not legally bid to possess them.

The problem is one part legal, one part moral, and the adventure-entrepreneurs on this 200-foot (60-meter) tender led by Robert Chappaz of France and John Joslyn of California are not finally resolved on what to do with it all, after it goes from here to France, where a government agency will preside over the restoration. And then to Monte Carlo or Paris, where the artifacts will be part of a documentary scheduled to be shown in America on Oct. 28.

The hold the Titanic has on the public is evidenced by the score of books that have been published since the 700-odd survivors came into New York harbor on April 18, leaving behind them at 40 degrees 16 minutes north latitude, 40 degrees 14 minutes west longitude, more than 1,500 people who died on that stuffy night, when the ocean was so smooth that if its temperature (several degrees below freezing) had served to create ice, passengers who did not get a place in the lifeboats could have stayed afloat.

But the waters south of Newfoundland do not freeze into ice, however efficient they are in freezing people who jump into them. Jump into them not as trainees for the Polar Club but because some passengers elected that alternative to merely going down with the giant 882-foot vessel, the largest ever built at the time, embarked on its luxurious maiden voyage from Southampton to New York.

One popular legend about the Titanic is that those who were not aboard the spare lifeboats went down to the bottom of the sea in the vessel. They didn't. In fact, the evidence is that, as they crowded the stern deck waiting for the final, exhausted plunge as the sea water, pulling in through the starboard cavity sprung by the iceberg, crawled aft toward them, they had on life preservers. They were visible to the survivors in the 20 lifeboats and rafts. When the Titanic went down, its crew and passengers floated up under the buoyant imperative of their life preservers, including the musicians who were playing in the main saloon as the great ship went down.

One hopes there were wise men among them who thought to ditch their life preservers, because that way they would have died within a matter of minutes. As it happened, they floated up from the descending ship in a tight circle around the spot where the ship had squatted from the moment the engines were turned off at a quarter before midnight until 2 in the morning, when it took its final, all but vertical dive. Instead of going down, they floated in the freezing water, and there was much testimony by the survivors to the awful walls of pain, desperation and entreaty, lasting as much as 40 minutes, as little by little the cold froze them to death — leaving forever unanswered the question: Why didn't the lifeboats, half of which were half-empty, make any effort to rescue at least a few of the survivors?

There will be no hint given of why this was so when I go down to see the remains of the Titanic.

Universal Press Syndicate.

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LETTERS TO THE EDITOR

Spreading the Blame in Southern Africa, and Elsewhere

In two front-page articles on the economic problems of Mozambique and Angola (Sept. 2), the country of South Africa was mentioned only once.

The report "Rebellion Leaves Mozambique a Stricken Country" fails to mention South Africa at all in discussing the war that has destroyed Mozambique's economy. It calls a "civil war" what is in fact a continual attack on Mozambique by the government of South Africa using mercenaries. Without the support of South Africa, the Mozambique National Resistance, Renamo, would not exist.

The report does, however, manage to mention Cuba, the Soviet Union and East Germany as supporters of Mozambique. The other article, "Oil Money Shields Angola From Jolt of Fiscal Reality," sees fit to mention South Africa once, but without indicating that South African military forces are making repeated attacks on Angola. Once again we read of a "civil war" and not of an organized campaign of destabilization by South Africa.

RANDALL ERICKSON, Paris.

The Reagan administration has recently declared that there is no connection between disarmament and development. As your Sept. 2 stories on Angola and Mozambique make clear, the deaths, injuries and destruction of habitat and lives

liberty, eliminating almost all hope of economic and social progress in millions of people throughout the so-called developing world, is a direct consequence of the sale or gift of sophisticated weapons by the developed countries.

This lethal hypocrisy was well illustrated recently when the five permanent members of the United Nations Security Council demanded a cease-fire in the Iran-Iraq war. The five, along with client states, supply the bulk of the weapons that permit the insanity to continue.

STERLING DOUGHTY, Geneva.

Life-and-Death Numbers

Lewis Fry Richardson's work on arms races and wars deserves more than the casual mention by Barry James in "Improving Forecasting by the Numbers" (July 30). Mr. Richardson's studies constitute the foundation of a small but growing scientific literature on arms race dynamics and conflict.

His two major books on these topics, "Arms and Insecurity" and "Statistics of Deadly Quarrels," were published in the United States by American scholars long after his death. In the 1930s and '40s, the application of mathematics and statistics to the problems of war, peace and security was not taken seriously and was

considered too outlandish to be published. Yet Mr. Richardson was the first, to my knowledge, to demonstrate with considerable accuracy how even defensive moves made by nations to improve their security could lead them into the vicious cycle of armament escalation. The consequences of this process are still with us today and underlie the debates surrounding the Strategic Defense Initiative and the disarmament negotiations.

Mr. James also mentions the work of John von Neumann who, as the main creator of games theory, provided scholars working on problems of war, peace and conflict with the theoretical foundations and analytical tools to explore some of the ideas set forth by Mr. Richardson.

Mr. Richardson, like Mr. von Neumann, made fundamental contributions to a wide range of fields, from meteorology and hydrodynamics to issues of war and peace. The scope and results of Mr. Richardson's work qualify him as a pioneer and a major scientific figure of the first half of the 20th century.

URS LUTERBACHER, Graduate Institute of International Studies, Geneva.

The Soviet System Endures

Nathalie Novik (Letters, Aug. 25) is mildly pleased with *glasnost*. She does not appreciate that *glasnost* as current

changes in the Soviet Union verge on liberalization, they are insignificant, and insofar as they are significant they aim at consolidating Soviet totalitarianism.

There is nothing new about open criticism of various sectors of the Soviet economy. Lack of productivity, the manufacture of poor quality goods and alcoholism were frequently condemned in Stalin's and Khrushchev's days, just as efforts to improve the dismal standards of living have been going on since the end of World War II.

Tatars and Estonians may get away with small demonstrations, but these are followed by arrests and, of course, their demands fall as usual on deaf ears. The Stalinist nature of the U.S.S.R. has not changed. Expansionism is alive and well in Afghanistan. The people live in a closed society from which, generally, they cannot escape. The Communist Party is not surrendering its power or privileges.

The East European satellites remain frozen in the shadow of the Red Army. Thousands of dissidents remain in camps or psychiatric prisons.

Calculated propaganda gestures like the release of Andrei Sakharov or the occasional intrusion of a Western voice in the Soviet media do not alter the basic character of society. There is no "slow winter thaw," merely some long overdue adjustments of the one-party state.

LIONEL BLOCH, Gstaad, Switzerland.

Leave the Titanic in Peace

If the Titanic were an ancient wreck, like a Greek trireme at the bottom of the Aegean, there would be no objection to raising parts or all of it. If it were recently sunk, like the *Herald of Free Enterprise*, which went down in shallow water in March, there would be no discussion of the rights and wrongs of a salvage operation. Provided there were no technical difficulties, everyone would want the ship raised and my bodies of victims delivered to next of kin for a decent burial.

But the Titanic went to the bottom 75 years ago and became a graveyard for more than 1,500 people, just as military cemeteries in every land are final resting places for thousands who did not want to end up there. So the Titanic site should receive the due respect of a cemetery.

RIKKE HENGE, Vienna.

Straight Talk About AIDS

Congratulations to you for printing, and to Robert Scher for writing, the article on AIDS entitled "U.S. Experts Doubt a Heterosexual AIDS Epidemic" (Aug. 15). It is by far the most factual, clear and concise report on this subject that I have seen. This is the type of reporting worthy of a global newspaper.

PHILIP E. NEWMAN, Puget-Ville, France.

GENERAL NEWS

Moscow's Decision on Radar Site: Opening the Door for Political Gains

By William J. Broad

NEW YORK TIMES SERVICE
MOSCOW — Although possibly providing new ammunition for those who charge it with treaty violations, the Soviet Union has taken the surprising step of opening a disputed top-secret radar installation to Western inspection to show its willingness for an East-West accord at a critical time in arms control.

The Kremlin, in making its decision to open its Krasnoyarsk site to a congressional delegation over the weekend, seems to have calculated that the gains would outweigh any political or military losses.

The Reagan administration has insisted for years that the partly built "phased array" radar station violates the 1972 anti-ballistic missile treaty, and Washington has often cited this as one of the more egregious examples of Soviet cheating on treaties.

In opening the installation for inspection, Moscow has not succeeded in putting an end to the charge, but it has made itself seem more interested in resolving the vexing radar issue than in risking the future of the ABM treaty.

A clear political risk is that the Reagan administration might ignore the bid for a dialogue and simply cite the new Krasnoyarsk findings as evidence to back up its charges.

The inspection indicated, however, that the worst fears of American military experts about the site appear to be unfounded.

Although the half-built radar clearly raises questions about Moscow's adherence to the letter of the ABM treaty, close inspection suggested the site is more benign than menacing — that it is potentially a mediocre early-warning radar rather than a hardened bunker for coordinating anti-missile war.

The Soviet decision was also probably influenced by arms-control advocates in the United States who vigorously lobbied for the disputed site to be opened.

More than a year ago, the National Resources Defense Council, a private group based in New York, raised the issue in meetings with Soviet officials. The group runs a program to monitor the Soviet nuclear test site in Soviet Kazakhstan and has good access to Soviet officials.

In April, Representative Thomas J. Downey, Democrat of New

York, also pressed Soviet officials in Moscow about the radar.

Mr. Downey and the National Resources Defense Council eventually joined forces in a week-long trip to the Soviet Union to pursue a variety of arms-control issues; the visit culminated in the Krasnoyarsk tour.

On one technical level, the Russians had little to lose since top-secret photos from American spy

satellites had already raised many questions about the radar's purpose. Spotted from space more than four years ago, the radar is clearly pointed northeast — a direction well suited for tracking enemy warheads and less than optimal for tracking satellites, the rationale offered by the Soviet Union.

For years, the Pentagon has said

U.S. Delegation Not Sure if Radar Breaks ABM Pact

NEW YORK TIMES SERVICE

WASHINGTON — Three congressmen and several experts who visited the Soviet radar site at Krasnoyarsk last week said Tuesday that they were unable to determine whether the installation violated the 1972 anti-ballistic missile treaty.

But the State Department repeated the Reagan administration's contention that the radar does in fact violate the ABM treaty.

The returning delegation praised Moscow for opening the site to inspection and said the two years or so before the radar becomes operational provided the United States with an opportunity to negotiate a resolution to the dispute.

The Reagan administration, citing the 1972 treaty's ban on anti-missile radar that could be used for battle management in a nuclear war, has dismissed the Soviet assertions that the Krasnoyarsk radar is to be used for space tracking.

The State Department spokesman, Charles E. Redman, said Tuesday that the administration stood by its assessment. "We see no evidence in the information available now," he said, "which would alter our conclusion that the radar under construction at Krasnoyarsk constitutes a violation of the ABM treaty."

the Krasnoyarsk site violates a prohibition in the ABM treaty against deploying high-powered early-warning radars anywhere except along a nation's periphery.

This criticism increased in April, when photos of Krasnoyarsk, taken by a French civilian satellite, were made public. Private military experts quickly used these images to confirm the Pentagon's judgment — that the radar was pointed northeast and was thus a probable violation of the ABM treaty.

What the recent inspection did was to lessen the West's worst fears about the site. The Reagan administration has charged that the radar is intended to track enemy warheads, at the very least for early warning of nuclear attack, and possibly for help in waging defensive wars meant to destroy enemy missiles and warheads, an ABM application known as battle management.

But inspection showed the site to be half-built and shoddy, apparently with no future as a hardened bunker for waging anti-missile wars. At best, it might someday be a humdrum early-warning radar with some limited satellite-tracking capability.

One of Moscow's potential losses in the visit involved the breach of military secrecy. A major goal of hiding what seem like mundane facts about military hardware is to deny potential foes from knowledge of the strengths and weaknesses of a nation's war machine.

In an unusual break with such principles, the American delegation that toured the site was allowed to take more than 1,000 photos inside and outside the giant radar, many of which will undoubtedly be subject to detailed analysis by the Pentagon. Moreover, that flood of information could reveal a kind of blueprint to many other Soviet installations, since the Krasnoyarsk radar is similar to several "phased array" radars under construction in the Soviet Union.

Even so, having seized the initiative by opening the site to foreign eyes, the Soviet Union now stands ready to score political points.

Most importantly, increased candor over Krasnoyarsk seems to be a desire to stop the erosion of the ABM treaty, ostensibly a long-term Soviet goal based on its opposition to President Ronald Reagan's "Star Wars" anti-missile program.

Get a taste of Mom's pumpkin pie. Call home.

You can just see her, testing the crust with her fork, as if every pie she's ever made hasn't been perfect. Tell her this one will be great, too. Go ahead. Reach out and touch someone.®



Sikh Priests Say Militants Have Unified For Struggle

Compiled by Our Staff From Dispatches

AMRITSAR, India — Four of the five chief priests of the Sikh religion on Wednesday declared that militant groups fighting for a separate Sikh nation in Punjab State had unified, and the priests urged followers to support the "war of liberation."

The priests said that 16 militant groups in India and abroad had achieved "complete unity" and would provide political leadership to Sikhs in place of the "discarded Akali leadership."

The statement was the strongest yet by Sikh religious authorities.

It occurred as the separatist campaign is becoming increasingly violent after the government of Prime Minister Rajiv Gandhi took over the administration of the northern state on May 11. Mr. Gandhi dismissed the moderate Sikh government of the Akali Dal, the traditional Sikh political party.

The national government reacted sharply to the priests' statement and vowed to defeat Sikh terrorism.

The priests' statement "has come as an open and direct challenge to the unity and integrity of the Indian nation," Federal Home Minister Buta Singh said in New Delhi.

The announcement was made by four of the five members of the Akali Takht, the religion's highest temporal body. It is responsible for preserving the faith and arbitrating religious disputes.

The announcement from the Golden Temple, seat of the Sikh religion, called on Sikhs worldwide to give *tan man dhun*, or body, soul and wealth, to the militants' "devotion for liberation." It said the Indian government was oppressing Sikhs throughout the country.

The militants claim Sikhs suffer discrimination from India's Hindus, who make up more than 80 percent of the country's more than 750 million people.

Sikhs, whose religion was founded as an alternative to warring Hinduism and Islam, make up only 2 percent of India's population. But they are a majority in the Punjab, a rich farming state.

Jaswant Singh of the Damdama Sahib, a major Sikh temple, read Wednesday's announcement at a news conference.

Three other leading Sikh priests, Puran Singh, Kashmir Singh and Sawinder Singh, said they supported the statement. Singh, which means lion in Punjabi, is part of every Sikh man's name.

A formal announcement about the unification of the militants will be made by the groups soon, the priests said.

The 16 groups are known to include the Khalistan Commando Force, Khalistan Liberation Force, Babbar Khalsa and Bhindranwale Tiger Force.

The priests also criticized professor Darshan Singh, the head of the Akali Takht and fifth member of the body, for fleeing the Golden Temple on Aug. 8 after he received death threats from militants in the shrine.

On Aug. 17 the four priests had called on the militants to provide leadership for the 16-million-strong Sikh community in place of the Akali Dal.

The Akali Dal was elected to power in Punjab in 1985, but dismissed in May by New Delhi for allegedly failing to tackle the campaign for a homeland in Punjab, in which nearly 1,300 people have died since last year.

The Indian Army stormed the Golden Temple on June 6, 1984, and more than 1,000 people were killed, most of them Sikhs. The prime minister at that time, Indira Gandhi, ordered the raid to drive out Sikh militants using the temple as a refuge for attacking Hindus and rival Sikhs.

On Oct. 31, 1984, Mrs. Gandhi was assassinated in New Delhi, and police said the killers were two of her Sikh bodyguards who were avenging the Golden Temple raid. One Sikh guard was shot to death by other guards. Three other Sikhs were convicted in connection with her killing and have been sentenced to be executed.

(AP, AFP, UPI)



EXTRADITED FANS IN BRUSSELS — Police vans carrying 25 Liverpool football fans arriving Wednesday at the Palace of Justice in Brussels for a hearing before a magistrate on charges of manslaughter in connection with the Heysel Stadium riot, in which 39 persons were killed in 1985. A 26th fan who was scheduled to be extradited was still Britain in connection with another case, police said. The trial is expected late this year or early next.

EXPORT: French Firm Investigated in Sale of Military Technology to Soviet

(Continued from Page 1)

clear," said he added: "They are generally reluctant to talk."

COCOM's list of products that cannot be sold to Soviet bloc countries include milling machines with more than three independent axes, or cutting directions. The number of axes on a milling machine determine its ability to produce complex metal parts.

French government authorities were not available for comment and did not return telephone calls.

In a report issued to the press in Tokyo, Toshiba said its engineers had seen a multi-axis machine made by Ratier-Forrest already operating at the Balise Shipyard near Leningrad when they arrived to install their own, more sophisticated, nine-axis machines in 1983.

U.S. investigators believe Toshiba had initially turned down requests for the milling machines from the Soviet Union, citing COCOM restrictions. They said Toshiba only changed its mind after it learned its French competitor had already shipped similar machines.

Christian Sarret, an executive of Forest Line, as the French company now is known, said Wednesday that "to the best of our knowledge, all machines produced in our workshops and sold abroad have authorization from COCOM."

A former executive of Ratier-Forrest, who was involved in the sale, said he doubted the company broke any rules in selling the machines.

"I'm not sure these machines were ever in contradiction with COCOM," said Robert Vitrat, who at the time was sales director of Ratier-Forrest. He said the company delivered "at most" two of the five-axis machines to the Soviet Union in 1976-77.

He said the export license applications were approved by the industry and trade ministries, as well as France's COCOM delegation.

"As far as I remember, we had

no problem at all getting approval for that kind of machine," he said. He added that the company was aware that the machines were going to be used at the shipyards, but that it did not know they would be used for military applications. The Soviets, he said, did not permit the company to install the machines.

One U.S. naval analyst, who asked not to be named, said: "I suspect that if they had a program to make a new generation of submarine propellers, the French equipment was a considerable help."

Mr. Vitrat acknowledged the machines may have helped "im-

prove the production and productivity" of the submarine propellers, but he emphasized that the Soviets had already designed and produced the parts on their own.

"No machine has ever invented a new propeller profile, and that's a very important point," he said. U.S. officials say the machines' final destination should have kept the French authorities from approving such a sale.

"The disturbing thing here is that if anyone said 'Balise Shipyard' to us, we would have said 'No, never,'" said Stephen D. Bryen, who heads the Pentagon's export control office.

DANES: Schluter to Stay On Despite Election Setback

(Continued from Page 1)

played surprising strength rallying blue-collar workers with its anti-tax, anti-immigrant message. The Progress Party's nine votes would give Mr. Schluter his majority, but the Radical Left refused to form a coalition with a party it regarded as "racist."

Anker Jorgensen, 65, a former prime minister and the leader of the Social Democrats, moved boldly Wednesday to take advantage of Mr. Schluter's troubles. He asked

Niels Helvig Petersen, the Radical Left leader, to abandon Mr. Schluter and add his 11 votes to the 85 votes held by the coalition led by the Social Democrats and the Socialist People's Party.

This would bring in a new Socialist government and amount to a dramatic repudiation of Mr. Schluter's effort, since 1982, to move Denmark toward a market economy and restrain spending on maintenance of the welfare state. Given the high political stakes, it

is hard to think of another country where such bargaining among three leaders would take place at a good-humored public luncheon.

On Wednesday at the Hotel Royal in Copenhagen, the audience laughed and the three men exchanged witticisms as Mr. Jorgensen asked Mr. Petersen to help him do in Mr. Schluter. Mr. Petersen responded cordially, but refused. Mr. Schluter said that the three gainers in the election all had "extremist views."



The Soviet foreign minister, Eduard A. Shevardnadze, meeting in Moscow with Kuwait's foreign minister, Sheikh Sabah al-Ahmad al-Sabah, head of an Arab League delegation.

GULF: Iraq Reports 13 Bombing Attacks Against Iran

(Continued from Page 1)

tions about the American presence there.

Mr. Webb broke a long silence on the policy of escalating fights in the Gulf after The Miami Herald disclosed that he had sharply questioned the policy in private during its formulation.

"The United States took an enormous leap beyond its international obligations in order to set the example," Mr. Webb said.

In London, the British Broad-

casting Corp. monitored an IRNA report Wednesday saying that the Soviet Union and Iran had made progress toward agreeing on the exporting of Iranian oil through Russia.

IRNA said that an agreement in principle was reached Tuesday in Moscow between the Iranian deputy foreign minister for economic affairs, Mohammed Larjani, and the Soviet prime minister, Nikolai I. Ryzhkov.

In Moscow, Mr. Ryzhkov met a

seven-member Arab League delegation on Wednesday to discuss efforts to end the Gulf War, Tass reported. The delegation was led by the Kuwaiti foreign minister, Sheikh Sabah al-Ahmad al-Sabah.

In Rome, Italy's government called a confidence vote in Parliament on Wednesday over its decision to send warships to the Gulf. The decision has aroused opposition both from the left and from some government supporters.

(AP, Reuters, NYT)

Dole Says Call for 'a Little' Invasion Of Nicaragua Was Not Just a Quip

The Associated Press

WASHINGTON — The Senate Republican leader, Bob Dole, said Wednesday that he was not simply making "a quip" when he was quoted as saying that "a little three-day invasion" of Nicaragua would be welcomed by the people of Central America.

The Kansas Republican said that "I was just expressing an opinion" that President Daniel Ortega Saavedra of Nicaragua was not well-liked in Central America.

"It wasn't a quip," Senator Dole said. "It was a very serious interview" with Milwaukee Sentinel reporters.

The senator, an unannounced candidate for the Republican presidential nomination, visited Nicaragua during the monthlong congressional recess that ended Wednesday. During the visit he met Mr. Ortega.

In the interview, Senator Dole suggested that Mr. Ortega is so disliked by other Central American leaders that President Oscar Arias Sanchez of Costa Rica would not object "if somebody came down there and sort of blew" Mr. Ortega away.

"I don't mean kill him," Mr. Dole said. Pressed, he added: "I've got a feeling a little three-day invasion wouldn't make anybody unhappy down there, if you just overthrow Ortega. But that's just my guess."

Later he attempted to back off any implication that he was advocating U.S. military action in Nicaragua. He said that he did not know whether Mr. Ortega's government could be overthrown in three days and that it would be preferable if other Central American nations "can isolate him."

Asked how far he is willing to go in seeking a military solution in the region, he said: "I'm not even suggesting that. We don't need to do that."

Asked again Wednesday about the invasion comment, Mr. Dole declined to repeat it. But he added, "I just said some people would not find that too offensive."

Peace Plan Called Flawed

Jack F. Kemp, a conservative U.S. congressman, has opened a campaign to persuade Central America's leaders that the peace plan they signed last month is "fundamentally flawed" and "a recipe for disaster" in the region. The New York Times reported from Tegucigalpa, Honduras.



Senator Bob Dole

Mr. Kemp, a New York Republican who is seeking his party's presidential nomination, arrived in Honduras on Tuesday along with more than 50 leaders of conservative groups.

Mr. Kemp said the trip was also intended "to let Congress and the White House know we are not will-

ing to relax our efforts to continue aid to the freedom fighters."

The congressman, along with Senator Jesse Helms, Republican of North Carolina, is the author of a bill to provide \$310 million in assistance to the Contras over the next 18 months.

Under a peace plan signed by the leaders of Costa Rica, Guatemala, El Salvador, Honduras and Nicaragua last month, cease-fires are to begin in both Nicaragua and El Salvador on Nov. 7 and outside assistance to insurgents in Central America is to stop.

U.S. officials have expressed at least lukewarm support for the peace plan. They have said that they might seek additional aid for the Contras if the plan, which includes pledges by Nicaragua to declare an amnesty and lift restrictions on dissent, were to falter.

For Mr. Kemp and other conservatives, the plan is the plan is that while it calls on the United States to halt assistance to the rebels, it allows the Soviet Union and Cuba to continue to supply the Nicaraguan government.

Land Reform Minister Dies in Brazil Air Crash

By Juan de Onis

International Herald Tribune

RIO DE JANEIRO — Brazil's agrarian reform minister and six top advisers have been killed in a plane crash, dealing a severe blow to President Jose Sarney's program to give land to more than one million peasants.

An air force jet carrying the minister, Marcos Freire, and the advisers crashed Tuesday evening just after taking off from an airport at Carajas in the Amazonian state of Para. Witnesses said the plane exploded before the crash.

Mr. Freire and Jose Eduardo Vieira Raduan, superintendent of the Agrarian Reform and Colonization Institute, had been inspecting land reform sites in a region that has been the center of numerous land takeovers and rural violence.

Mr. Sarney said the accident had inflicted a "severe loss" and declared three days of official mourning. Mr. Freire, 36, a former senator from Pernambuco, was a

national figure of the governing Brazilian Democratic Movement.

Mr. Freire, a moderate, was Mr. Sarney's fourth minister of agrarian reform in less than three years. His predecessors all resigned under fire from landowners.

He was appointed three months ago to negotiate with the powerful landowner associations, which have armed themselves against peasant land invasions.

The Roman Catholic Church, which actively supports peasant demands for land, has reported the killing of more than 150 people in land disputes since 1985, including two priests and a nun.

Resistance from landowners, lack of funds and shoddy administration of the land distribution program have severely restricted Mr. Sarney's ambitious target of settling 1.4 million peasants in five years.

Mr. Freire said last week that only 17,000 peasant families had been settled under the program last year.

MARSHALL: Supreme Court Justice Criticizes Reagan on Civil Rights

(Continued from Page 1)

dent in comments off the bench. In his interviews with Mr. Rowan, Justice Marshall also gave unfavorable assessments of Presidents Franklin D. Roosevelt, Dwight D. Eisenhower and John F. Kennedy, while praising Presidents Harry S. Truman and Lyndon B. Johnson.

The interviews were recorded in recent months for a program on the Constitution called "Searching for Justice: Three American Stories."

In a telephone interview Tuesday evening, Justice Marshall said that as far as he recalled, his interview with Mr. Rowan was the only formal news interview he had given since President Johnson named him to the court in 1967.

In the telephone interview, the justice chuckled at times as a reporter read back to him parts of the transcript, apparently amused by the interest his comments had aroused. But he said, "I'm not going to elaborate on anything."

He also declined to comment on the nomination of Judge Robert H. Bork to the Supreme Court. Judge Bork, who has a conservative judicial philosophy, has criticized many Supreme Court decisions in which Justice Marshall has joined.

In his interview with Mr. Rowan, Justice Marshall spoke bitterly of the treatment of blacks throughout American history, including the present. In a speech in May he denounced the "perpetuation of slavery" and other actions by the framers of the Constitution.

However, in the interview with Mr. Rowan, he said that with the addition of the post-World War amendments extending rights to blacks, "You'll never find a better Constitution than this one."

"The biggest thing we brag about in this country on the ethical side is that it's the great melting pot," Justice Marshall said. "As I sit and look at it now at this late date, I have come to the definite conclusion that if the United States is indeed the great melting pot, the Negro either didn't get in the pot or he didn't get melted down."

Asked by Mr. Rowan to rate some of the presidents and their impact on racial justice in his lifetime, Justice Marshall said: "I don't think Roosevelt did much for the Negro. But I think Truman is going to come out on top. Eisenhower I don't think did anything. Except to try to under-

mine the school decision — which he did. Kennedy was held back by the attorney general, his brother. His brother said don't do anything for the Negroes because you won't get re-elected and then do it. And then he got killed."

But Johnson, his plans were unbelievable, the things he was going to do. But he was too far off for Negroes and civil rights, he wasn't thrown out because of Vietnam, they just used it as an excuse to get rid of him."

In response to a question, he said he thought Johnson was the greatest president in terms of civil rights.

Of Jimmy Carter, he said: "I think his heart was in the right place. But that's the best I can do with him."

There followed this exchange: Mr. Rowan: "What about Ronald Reagan?"

Justice Marshall: "The bottom." Mr. Rowan: "The bottom?"

Justice Marshall: "Honestly, I think he's down with Hoover and that group. Wilson. When we really didn't have a chance."

Mr. Rowan: "Of all he's been one of the most popular presidents the country ever had in the polls."

Justice Marshall: "Is he more popular than the average movie star?"

Justice Marshall also told Mr. Rowan that when he was ill with pneumonia at the Bethesda Naval Hospital years ago, President Richard M. Nixon had sought a report on his condition, an interest that the justice suspected grew out of Mr. Nixon's eagerness to have a court vacancy to fill.

He said he had told a navy officer: "Well, admiral, you have my permission to give it to him only on the condition: that you put at the bottom of it, quote, 'Not Yet.'"

Like San Marino, Andorra has found an economic salvation in tourism, but this raises the question of preserving national identity.

Last year, about three million tourists traveled to the 20-kilometer-long Rijnini to San Marino to return laden with pottery and trinkets, most of it mass-produced elsewhere. "I sometimes wonder whether we will have to turn the whole place into a parking lot," Mr. Giardi said.

Liechtenstein owes its wealth partly to its status as a tax haven for thousands of foreign companies that have put up brass plates in Vaduz, the capital, partly to tourism and partly to the development of light industry, such as the manufacture of false teeth.

Prince Franz Josef 2d, the last of the Habsburg monarchs, has reigned since 1938. The prince, 82, has turned over the day-to-day running of the country to his son, Alois, who has no army, 52 policemen and one ambassador, who is based in Bern.

Etienne Franzini, the delegate from Monaco, was enthusiastic about the charms of his haven for the wealthy.

Apart from a situation in which many of the 5,000 native Monaco residents find it hard to afford the place, is there anything wrong with life in there? "Honestly," Mr. Franzini said, "I can't think of a single one. The proof is that everybody wants to go and live there."

Most of the 12 million people who visited Andorra last year were from the neighboring countries. They take home things like cheese and dairy products — the products are shipped to Andorra with the aid of EC export subsidies and are therefore legally supposed to be consumed within the country — as well as luxury goods, cigarettes, liquor and electronic equipment. If

the community decided to choke off that trade, Andorra's economy would be ruined.

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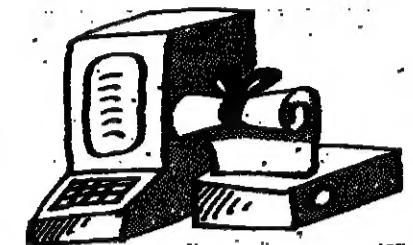
DEPARTMENTS

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One of the only sure bets at the Frankfurt Auto Show opening Friday is the world debut of the BMW Z1 roadster. But some observers think Ferrari's F40 — the fastest road-going car available — might steal the show.

Business 9

Safer flying is one of the aims of a technologically advanced device for airplane cockpits called head-up display. The device in tests has enabled pilots to land manually in conditions that would have closed an airport.



Computers 10

Western nations are easing rules on computer exports to the Soviet Union, but one longtime critic argues that doing so could be fulfilling Lenin's dream that capitalists will produce the rope needed to hang themselves.

Workplace 11

Clocking in on Platform 6 at 7:40 A.M., office staff of Asca, Scandinavia's largest maker of heavy electrical equipment, take to their desks in the world's first railborne mobile office.

Research 12

Although scientists continue to debate exactly why and how it works, the process of applying electricity to aid in the repair and growth of bones soon may be extended to an array of other problems, ranging from osteoporosis and osteoarthritis to spinal fusions and skin ulcers.

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Justice Marshall's takeover bids, joint ventures, international acquisitions and knowhow sales are proliferating in the carbon business — but that is Hewlett-Packard's business because carbon is becoming high-tech.

Next Issue

New technologies are aiding archaeologists in unlocking the mysteries of the pharaohs. Car-makers are finding the team approach to automated manufacturing isn't always the solution. These and other issues on Dec. 15, in TechnologyQuarterly.

Nations Divided on Ozone Accord

By Thomas Netter

GENEVA — In a last-minute hitch that could derail an historic agreement to save the Earth's vital ozone layer, the United States — and several other industrialized countries — have added potentially divisive proposals to the agenda of an international ozone conference in Montreal, environmentalists said Wednesday.

A new U.S. proposal, said to come from the White House and backed by anti-regulatory elements in the U.S. departments of Commerce and the Interior, would require 90 percent of the world's manufacturers of ozone-destroying chlorofluorocarbons, or CFCs, to ratify an agreement before it comes into force, according to David D. Doniger, an attorney at the Natural Resources Defense Council in Washington.

This measure, which Mr. Doniger said has the support of the Soviet Union, would allow Moscow and almost any other country to effectively veto an agreement because the Soviet Union produces 10 percent of world CFC production.

But the new U.S. proposal, raised during preliminary meetings in Montreal this week, is only one of several proposals that could make next week's meeting difficult, Mr. Doniger said. The European Community has proposed eliminating an important category of CFCs from the accord and lumping all 12 member state's production together, so a production

Environmentalists Fear Last-Minute U.S. Proposal Could Derail Agreement

decrease by one could allow an increase by another, Mr. Doniger said.

At issue is whether the ozone layer can be protected by an international treaty or whether alternative means, such as individual measures involving sunglasses and hats as proposed by some anti-regulatory U.S. officials, should be used.

Ozone is a special form of oxygen that reaches high concentrations in the stratosphere 10 to 30 miles (16 to 48 kilometers) above the Earth. This protective layer permits life on Earth by filtering the sun's harmful ultraviolet rays. If unimpeded, these rays can cause skin cancer, eye problems and reduced crop yields. In the early 1970s, scientists found that certain chlorine-based chemicals were gobbling up the ozone layer at an alarming rate.

These chlorofluorocarbons stay intact until they drift into the stratosphere where they disintegrate, their fragments destroying ozone. The gases are also believed to contribute to the warming of the atmosphere, the so-called greenhouse effect that results

when gases prevent radiant heat from the sun from escaping the Earth's atmosphere.

CFCs provide the spray in many aerosol spray cans, the cooling agents for refrigerators and air conditioners, the cleaning agents for computers, and the foam in foam rubber.

In 1978, the United States and Canada banned the use of CFCs in aerosol spray cans, causing a temporary decline in emissions. Most European countries, however, acted only to prohibit the construction of new plants producing this chemical. The chemical is still widely used for other applications. Per year, industry produces about 600,000 metric tons of CFCs.

The discovery of a growing "hole" in the ozone layer over Antarctica and parts of Switzerland that scientists suspect is caused by CFC emissions, has given new urgency to the issue.

In the most thorough study to date, a team of 150 experts organized by the National Aeronautics and Space Administration is conducting flights in the area this month to determine whether the "hole" is being caused by industrial pollution. The hole over the Antarctic appears each year in mid-September at the end of the southern winter. The amount of ozone decreases to less than half its normal density before returning to normal levels in October.

Other scientists are studying the Arctic skies, where a transitory thinning of the ozone layer was detected in February and March last year.

The meeting in Montreal, which is organized by the United Nations Environmental Program, is seeking to put the finishing touches on a tentative agreement

Continued on page 13



Over South Pole, a hole in stratospheric ozone has expanded to cover an area as large as the United States. Ozone protects the Earth from harmful ultraviolet rays.

Ytterbium? Or How a Typo Set Off Scientific Scramble

By James Gleick



Ching-Wu Chu in his superconductor lab at the University of Houston.

CERTAIN American scientists wasted some time recently trying to make a superconductor out of the wrong element. They were chasing a phantom — a typographical error by the physicist, Ching-Wu Chu. Certain American scientists believe that the error was no accident.

Mr. Chu, 36, stunned his colleagues and competitors in laboratories around the world last February by announcing the discovery of a new material that would make the phenomenon of superconductivity commercially feasible at last. But he refused to name the material before the official publication of his discovery, which was weeks away.

His claim set off a stampede. For experimenters struggling to take part, a hellish month followed — a month of tense days and sleepless nights. A practical superconductor, a material through which electricity flows without losing even the smallest fraction of its energy to resistance, would be a turning point in scientific history. Scientists were glimpsing a new age of electricity — a world of absurdly cheap power and trains floating in the grips of magnets. Enormous corporate interests were already at stake. Patent lawyers were chaperon-

JAMES GLEICK, a science reporter for The New York Times, is the author of "Chaos: Making a New Science," to be published by Viking in October.

ing the research teams like pilot fish surrounding sharks.

So Mr. Chu's incomplete announcement was every scientist's nightmare: the breakthrough of a generation, and someone else had the secret formula.

"It was gruesome," said Robert J. Cava, a member of a team at the American Telephone & Telegraph Co.'s Bell Laboratories, one of the major institutions near the forefront of the research. "There was a lot of pressure on us to figure out what was going on."

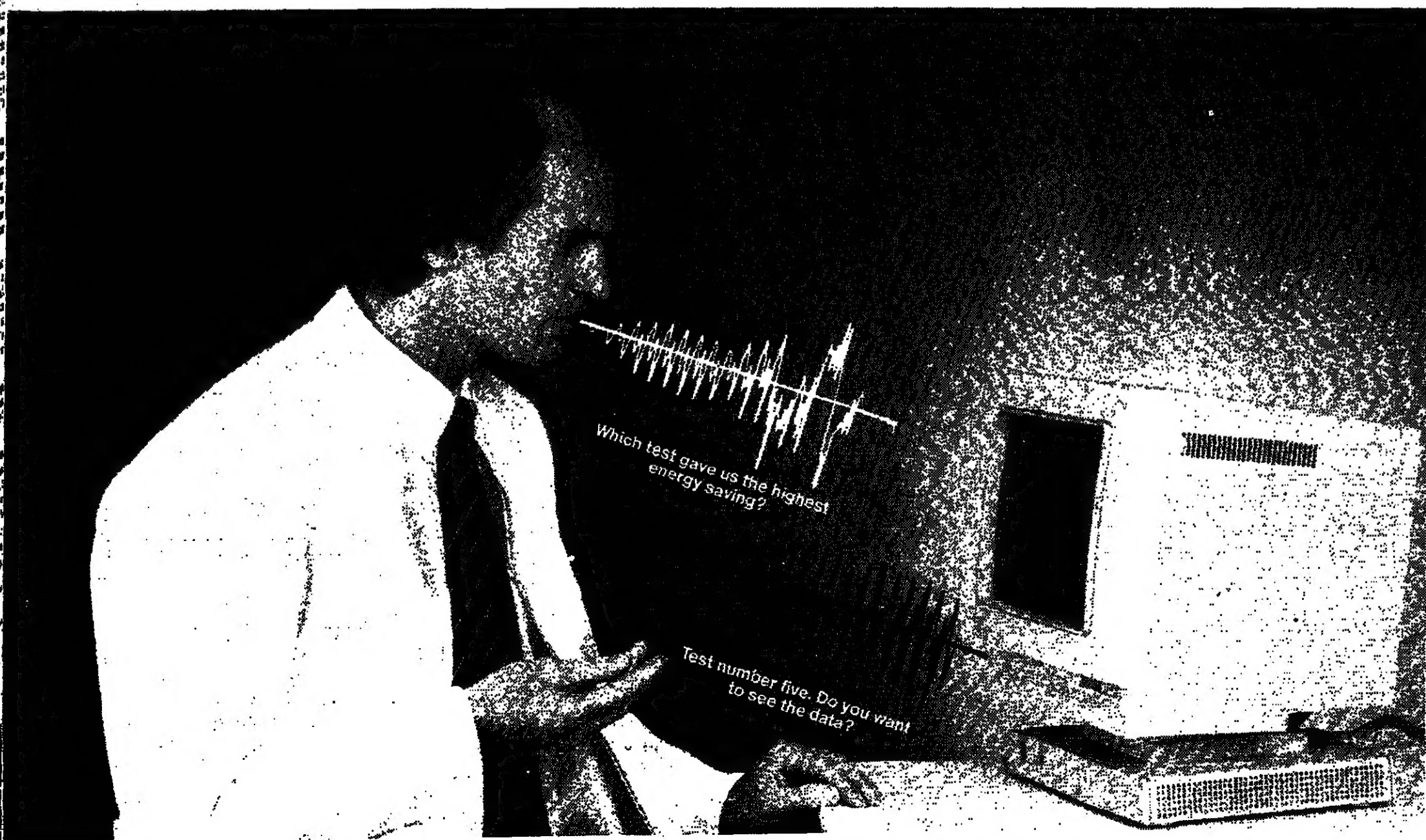
The Bell researchers say they remained in the dark until the last days before publication, but other scientists heard a provocative rumor: that the esoteric element ytterbium was the key to the new superconductive material.

Ytterbium was indeed the element named in the manuscript that had been submitted by Mr. Chu's team, relative unknowns at the University of Houston, to Physical Review Letters, the premier journal for reporting breakthroughs in physics. But when the journal appeared on March 2, the final paper named a different element, yttrium.

Mr. Chu had pleaded with the journal for special handling, insisting on secrecy, fearful that the editors would leak. "Which we now know they did — like a sieve," said Arthur J. Freeman, a theoretical physicist at Northwestern University. "Only they leaked ytterbium instead of yttrium. I had heard before that the material was ytterbium, and now I know where it came from."

As news of the yttrium-ytterbium affair Continued on page 12

This computer needs no keyboard for communication. It understands plain English.



AEG is developing an automatic speech recognition system by which computers of future generations will correctly react and answer to spoken instructions. This dialogue with computers is becoming more human.

Innovative technology from AEG. Here's more:

285 AEG uses the "Chip on Glass" technique for LCD type displays. Advantages: the display and driver electronic system are combined into a single unit, so the number of contact points is reduced to a minimum. This leaves the display back clear, allowing optimal rear illumination. Result: high brilliance at any time of day.

AEG supplies efficient electronic systems for environmental protection purposes: contaminants contained in both air and water can be automatically identified and analyzed, and there can be exact control of processes in waste incineration, exhaust gas purification or water treatment. In the event of operating trouble these "intelligent" microcomputers automatically contact the central system via the phone.

AEG's grouped networking is contributing to the economic use of the radio bands. Radio channels are bundled and managed by a computer, then allocated to subscribers as required. Communication bottlenecks are a thing of the past. This technology offers a number of characteristics not found in the usual radio networks. Grouped networking from AEG — already in successful operation in Schiphol airport Amsterdam and under construction in Frankfurt.

AEG

Technology At Home

Frankfurt Auto Show to Offer Some Souped-Up Surprises

By Michael Rutherford

LONDON — Major European motor shows are unpredictable events renowned for their last-minute unveiling ceremonies and surprise announcements.

Take, for example, the Geneva show last March: Aston Martin revealed its new, razor-sharp Lagonda to a stunned press and public; a Bentley Turbo R, built by British coachbuilder Hooper, was unveiled and immediately hailed as the "most expensive car ever to be produced for private sale." And Chrysler caught everyone with their guard down by announcing the brave (some might say foolish) decision to re-enter the fiercely competitive European market, where the Chrysler image is, at best, tarnished.

If the comparatively tame and unexciting Geneva show was capable of springing these kinds of surprises and more, it is anyone's guess what might happen at the 1987 Frankfurt show, which opens on Sept. 11. Frankfurt, probably the event in the European motor show calendar, is likely to be full of surprises.

Not many people can safely predict exactly what will go on show. In fact, one of the only things that is 100 percent certain to happen at Frankfurt is the world debut of the BMW Z1 roadster. The company is reportedly fed up with scoop photographers, assumptions, claims and doubts surrounding the car and has, therefore, decided to "put an end to supposition and rumor" by displaying the car on home soil.

The Z1, officially described as a "limited edition, mid-engined sports car," will go into production and on sale next summer. It is the brainchild of a small, young BMW offshoot, BMW Technik GmbH, which was set up by BMW AG as an autonomous operation with the objective of developing forward-looking products and processes.

The bold claim from Bavaria is that the Z1 is "light years ahead of the average souped-up mass-production car." It is based on a monocoque-style load-bearing skeletal steel chassis to which thermoplastic panels are hung. The plastic outer skin and bumpers/fenders help to keep the weight of the car down, and resistance to minor damage is assured, BMW says.

Although the two-seater Z1 can, according to the manufacturer, be driven in open-top form with scarcely any turbulence to disturb the occupants, there is an easy-to-use, leak-free soft top.

Beneath the skin, the Z1 boasts a variety of features lifted from current, highly successful BMW saloons. Initially, it will be powered by the new BMW 325i's six-cylinder engine. The low-pollution version with catalytic converter has "of course" been chosen, says BMW, which claims that the power pack accelerates the car from rest to 62 miles per hour in seven seconds.

Although BMW calls its new offering a mid-

engined car, the straight six engine sits just behind the front axle, which gives a near 50/50 weight distribution. Power reaches the rear wheels by way of a five-speed manual gearbox and a prop shaft running in a rigid aluminum tube to the rear differential, which is also made from aluminum.

The suspension uses BMW 3-series from spring damper struts and, at the rear, a Z arm layout of entirely new design. Handling is said to have a hint of go-kart immediacy about it.

With its wide track, low center of gravity and 49/51 rear axle load distribution, the Z1 has "more than adequate top speed," and everything needed for safe, predictable road behavior and abundant driving pleasure, says BMW. The price of the Z1 is likely to be about \$25,000 (\$40,000) when it goes on sale next summer. At that price, the car will be a certain sellout, particularly as only six a day will be produced.

Launched to the world's press a couple of months ago, the Ferrari F40 (working title, Ferrari Le Mans) seems certain to take the stage at Frankfurt and might just steal the show from the BMW Z1.

The public will see the F40 for the first time at Frankfurt, and what they will see is the fastest road-going car available from a manufacturer of production cars. Admittedly, that claim has been made by Ferrari itself — but few would argue. The F40's official maximum speed is a cool 201 mph, and acceleration from rest to 124 miles per hour takes a mere 12 seconds.

Never before has so much overt racing technology been applied to a road car. The F40 (F

for Ferrari, 40 because it celebrates 40 years of "supercar" production) has a stark interior, tubular steel chassis with carbon fiber reinforcement, and also features Kevlar, a stronger-than-steel fiberglass material more commonly used on Formula 1 racing cars.

Rubber bag fuel tanks are also part of the F40 package, along with an automatic lowering suspension system.

Beneath the car's lowered rear window, the longitudinally mounted V8 is clearly visible. It has twin turbochargers that help to produce a massive 478 bhp at 7000 rpm.

Only 450 F40s will be built, with deliveries being made starting in the spring. The V8 engine has the ability to meet U.S. emission requirements.

The basic price of the car in Italy is 270 million lire (\$201,000), plus car tax and value added tax. For that money, buyers will be invited to select a driving seat that matches their particular body shapes. And they will also go through a two-day "familiarization session" with their cars.

As if to prove that state-of-the-art technology is not the sole property of the dream-car manufacturers like BMW and Ferrari, Ford will be tempting Frankfurt visitors with its own brand of more affordable high-tech wizardry. The company's latest showpiece, designed and built jointly by the U.S. Light Truck division in Dearborn, Michigan, and the Ghia design studio in Turin, is the HFX Ghia Aerostar — a so-called "family driving machine" for the next century.

Ford is serious about the HFX project, so



BMW's "limited edition" monocoque-style sports car, the Z1.

much so that \$7.2 million and 27 months have already been invested in it.

The HFX is a six-seater, van-like vehicle powered by a three-liter V6 engine driving through a four-speed automatic transmission to the rear wheels. The suspension has a conventional layout, but uses air-springing from the Lincoln Continental and liquid-filled bushes for insulation of vibration.

The HFX's all-disc braking setup incorporates Bendix anti-lock and anti-spin devices, while the rack and pinion steering has speed variable assistance provided by an electric motor.

The Ghia-built steel body (which retains the basic shape of the standard Aerostar) has flush glazing and sensor-controlled radiator louvers. As might be expected, interior gadgetry is

extensive. There is a dot matrix instrument pack with a choice of three gauge styles, and a touch-sensitive screen for controlling air conditioning and trip computer functions. At the touch of a switch, rear windows can be "fogged" for privacy. A laminate using liquid crystal technology is responsible for the fogging process, which, sensibly, cannot be used on the windshield or front-door glass.

No less than 26 computers on board the Aerostar HFX are capable of adjusting/memorizing seat settings, seat belt mountings and even pedal settings.

Among other manufacturers, Alfa Romeo will finally put on display the much talked about 164; Audi Volkswagen is bound to pull the wraps off something (the new Supra or Audi 90 Coupe perhaps?), and Jaguar, keen to establish a stronger foothold in West Germany, may also surprise everyone by showing something for the first time. The fully convertible XJS has already been spotted undergoing "secret" testing in Britain.

Mercedes and Porsche are also expected to reveal new and exciting models on home ground. The new Mercedes SL sports car, for example, should make its debut at the show although nobody within the industry is putting money on it. A safe bet is that Opel will show the nippy Corsa GSi, which is about to challenge current offerings in the competitive hatchback sector.

Rivalry will be intense among Japanese manufacturers at Frankfurt. Honda and Mazda are racing each other to be the first to introduce four-wheel steering on cars in European showrooms. The latter has also just released a convertible RX7 in Japan, which means a European debut for the car is due. Toyota, which is rumored to be looking seriously at establishing a European production plant similar to the Nissan factory in the north-east of England, may be introducing several important new variants at Frankfurt. The new Corolla range is the most significant.

MICHAEL RUTHERFORD is news editor of Motor, the London weekly magazine.

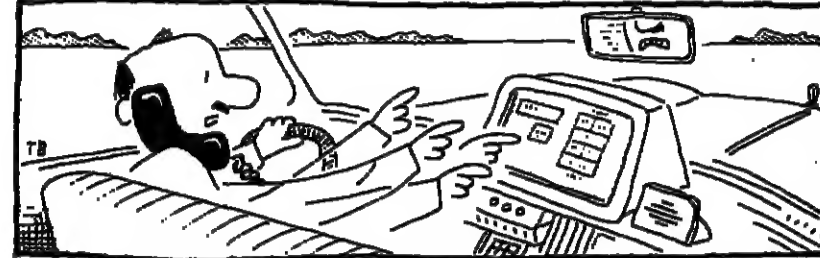
Final Score at Buick: Buttons 1, High Tech 0

By John Holusha

HIGH TECH is not the answer to every problem, officials of the Buick division of General Motors have learned. When a new and distinctly smaller Riviera model was introduced in late 1985, Buick decided to compensate for the lost bulk with gee-whiz electronics.

In place of familiar controls for the radio, heater, fan and air conditioner, the car's instrument panel was dominated by a touch-sensitive cathode-ray tube. Drivers would touch one section of the screen to call up command displays, then tap other spots to change the station, lower the temperature or check gauges.

But drivers found the screens confusing and difficult to operate. And they had to take their eyes off the road to tap just the right spots on the screen in just the right sequence. "The Riviera's setup does nothing that a conventional array of knobs, buttons



and analog instruments could not do in a fraction of the time one spends diddling with this microcircuited mess." Car and Driver magazine observed in a review.

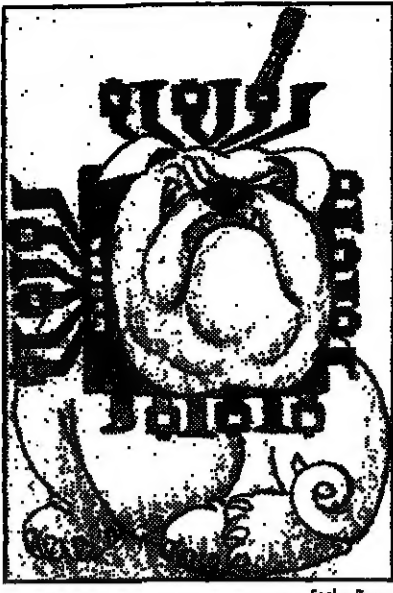
All the interior functions were controlled by the screen, so replacing it would have been expensive. And providing an electronic officer, as the air force often does, didn't seem very practical.

So Buick replaced the areas of the screen that control different functions with raised

buttons that could be operated by feel. Within the screen, it made the touch-sensitive areas larger — easier to hit. But it also added screens to control a tape player, cellular telephone and an appointment calendar.

"There may be no good way to do it, with all there is on the car," one Buick engineer commented.

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Sensory Assault

WHAT'S next for the modern flea-bitten pet? An electronic collar that will break the eardrums of any pest coming within a few feet.

Elexis Corp. of Miami has developed just such a device — an electronic collar for dogs and cats that emits a high-frequency sound that disrupts the sensory system of fleas and ticks.

The collar, called Microtech, employs a technology known as pulse-modulated burst circuit that creates a high-intensity sound beyond the audible range of dogs and cats but deafening to fleas.

"To a flea, it sounds like a jackhammer and that makes them run for cover," said Dr. Robert W. Stone, chief of staff at Knowles Animal Hospital in Miami.

Dr. Stone said that in hospital tests the electronic collar proved to be 60 to 90 percent effective in reducing the number of fleas on pets.

(NYT)

Contact Lenses To Throw Away

VISTAKON Inc., a Florida-based subsidiary of Johnson & Johnson, has begun market testing of disposable contact lenses.

The lenses, which are 52 percent water and made of standard contact-lens plastic, require no cleaning and can be worn for about a week before being discarded.

The company estimates that using the disposable lenses would cost an average \$520 a year. The lenses are being sold in Florida in a six-pack and are available for nearsighted correction only.

The U.S. Food and Drug Administration approved the lenses as disposable products in July. They had previously been approved for extended wear. (AP)

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atures. Experience has shown that such developments in the aircraft and aero space industries provide important stimuli for other markets.

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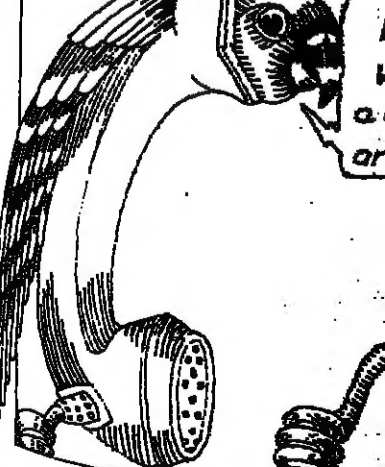
Fiber Optics

GENEVA, A NEW fiber optic television and much more being installed throughout the city by a variety of broadcast programs and computer networks.

Using fiber optic and coaxial cables, a firm called REGENVEVE S.A. and formed by private investors, is installing a network of cables that will connect up to 30 local and foreign radio programs and the Voice of America.

The network will also provide up to 40 television channels from the Soviet Union and the United States and will cost much, officials say. Viewers will be able to watch French-language Swiss television transmissions of the three main French networks.

The fiber optic network is also expected to link up to 100,000 homes in Geneva, which has the highest density of homes in Europe because of its well-developed banking and business interests.



Talking Phones

DEPENDENT PAY PHONE operators in the U.S. are turning to new technology to compete with Bell operating companies. Already some are using pay phones ready to give callers video messages, advertising messages and other services. Pay phones are also being designed to be used by people who are deaf or hard of hearing.

Technology Business

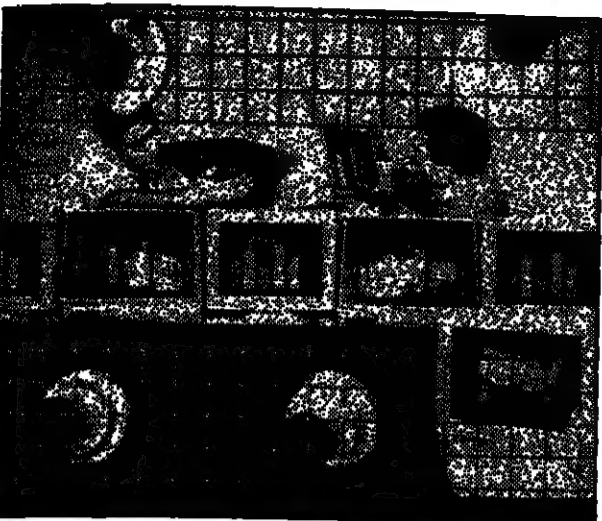
NOTEBOOK

New TV Tube

THE IDEA OF A PERFECTLY flat-surfaced color picture tube was tested, and reluctantly rejected as being far too complex, in the 1950s when color television was young. Now, using an advanced design that was originally developed for use in military avionics, Zenith Electronics Corp. has returned to "flat technology" with a new color monitor for computers.

The flat technology monitor, which went on sale in the United States last month, appears to offer significant advantages over conventional cathode ray tube (CRT) monitors in brightness, contrast, color fidelity and reduced glare.

The flat technology will also be incorporated into some of Zenith's color television sets next year, a spokesman for the Glenview, Illinois, company said. (NYT)



Zenith Workers checking a flat technology monitor.

Passing Taste Test

JUDGES AT A LOS ANGELES County Fair recently awarded the gold medal to a white wine entered by Ariel Vineyards of San Jose. What they did not know until later was that the wine, Ariel Blanc, a blend of chenin blanc and riesling, was a de-alcoholized wine.

Most de-alcoholized wines have been made with distillation methods that drive off the alcohol with heat, but the heat also evaporates flavors and aromas. Ariel instead uses a cold filtration process called reverse osmosis, a technology originally developed for desalination.

In reverse osmosis, also known as ultrafiltration, the wine flows along a porous cylindrical membrane. Because the liquid flows along the membrane, rather than through it, very high pressures and very small pores can be used. Since alcohol and water are the smallest molecules, they pass through the membrane, leaving a syrupy wine concentrate behind.

"It's to the point where I'm filtering molecules, particles just above the atomic level," said Barry Gnekow, Ariel's wine maker, who then adds the water back, sometimes with a small amount of unfermented juice, to create Ariel's nonalcoholic wines.

Ariel sandwiches two membranes—one a dense but thin film polymer and the other thicker and more porous to permit greater retentiveness and a high-pressure flow. The result is a process less intrusive than many used in modern wine making, said Larry Leigon, Ariel's president. "The wine is the flavor, not the alcohol," he said. (NYT)

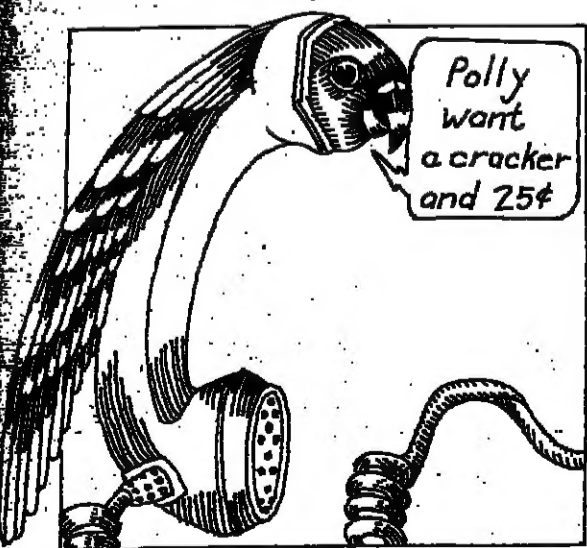
Fiber Optics

IN GENEVA, A NEW fiber optic television and radio network now being installed throughout the city is to open up a large variety of broadcast programs and computer links over the next four years.

Using fiber optic and coaxial cables, a firm called 022-TELEGENEVE SA, and formed by private investors and the city, is remodeling Geneva with a net of cables that will provide stations with up to 30 local and foreign radio programs including Grand Forces Network and the Voice of America. It will eventually also provide up to 40 television channels, including Cable News Network from the United States and something called Gorizon from the Soviet Union.

"Telecom" won't cost much, officials say. Viewers accustomed to one channel of French-language Swiss television and sometimes blurry transmissions of the three main channels of French television may find it a real bargain.

The fiber optic network is also expected to link up computers in Geneva, which has the highest density of high-tech computers in Europe because of its well-developed service, banking and business interests. Thomas Netter



Talking Phones

INDEPENDENT PAY PHONE operators in the United States are turning to new technology to compete with the established Bell operating companies. Already available on a limited basis are pay phones ready to give callers verbal instructions, present advertising messages and operate with computerlike video displays. Others accept credit cards, operate in taxis and limousines and let users choose among competing long-distance services. Pay phones are also being deployed on trains, jet aircraft and ships.

For people too busy to wait, the best yet is Message Phone Inc., which will continue to dial a busy telephone number long after the caller has left the pay phone. The phone records a message from the caller and then redials the number for up to two hours until a connection is established and the recorded message is played. (NYT)

Futuristic Cockpit Device Enhances Safety in Air

By Mark Patfky

WASHINGTON—Changes in aircraft cockpit design are slow in coming. Only within the last four years, for example, has electronic flight instrumentation come into its own on the airliner flight deck.

So, despite decades of space age promise, commercial aircraft are finally achieving a level of instrument sophistication that Apple Computer Corporation has been showing grade school students since the late 1970s.

NASA designers and engineers say the cockpit of the future will take far greater advantage of current computer graphics capability, creating full color, visual images rather than pure digital instrument indications in vogue today.

Using compact, airborne radar and infrared sensors plus data up-linked from the surface, pilots will see actual representations of land masses, hills and valleys. They will see runways in proper relationship and other nearby aircraft with far greater precision than the unaided human eye. And the computerized flight deck will display equally well in visual or instrument conditions.

Although this future may be sometime off, a device called HUD, for head-up

display, is here today. HUD offers a new dimension in aircraft instrumentation and a level of sophistication that promises a major enhancement in air safety.

The device allows pilots to continually look outside their cockpit while seeing instrument indications superimposed on the exterior view. In the current high density air traffic environment, the opportunity to continuously scan outside, dramatically decreases the chances for midair collision.

In light of the recent increase in reported airliner near-collisions, HUD takes on particular significance. High density airport traffic operations demand close attention to the outside environment. This is exactly the time when a pilot must maintain continual reference to instruments inside the cockpit. HUD offers a solution by presenting instrument indications against a clear external view.

In addition, the device offers facility for making low visibility approaches in the worst weather conditions, day or night. HUD has been demonstrated totally safe in allowing pilots to manually land in conditions that, previously, would have closed an airport or required costly auto-land capability.

Currently two U.S. companies are developing and manufacturing commercial head-up displays.

In 1985, Oregon-based Flight Dynam-



Head-up display, or HUD, helps pilots to avoid collisions.

ics Inc. received full Federal Aviation Administration approval and certification for HUD on the Boeing 727. Last month in conjunction with laser gyro-inertial navigation systems, a standard long-range navigation aid already aboard many domestic and trans-oceanic aircraft, the system was certificated to assess an aircraft's encounter with windshear

and provide guidance for flying through it.

Jet Electronics and Technology, in Grand Rapids, Michigan, is also manufacturing a similar though slightly less sophisticated system for corporate aircraft.

Essentially, HUD is a small glass window that sits on top of the pilot's glass shield. A series of instrument symbols are projected onto the glass with a virtual image focused at infinity. This allows the pilot to see the outside view plus instrument indications superimposed, without shifting his focus.

On most conventional instrument approaches, the pilot is looking at his instruments. As he descends to the published minimum safe altitude, possibly 100 feet (30.4 meters) above the ground, he must look up and search for visual clues.

A normal human being takes four to five seconds to refocus and mentally assimilate the new image. In this case, the aircraft will be 50 feet lower before the pilot has responded, therefore, reducing safety margins considerably. HUD eliminates this lapse by maintaining the pilot's view and focus at outside infinity for the entire approach.

Windshear enhancement is also part of the order for Alaska Airlines and Federal Express from Flight Dynamics. Not only is the pilot warned that windshear condi-

tions are impending but flight guidance information is provided for a safe recovery when the full windshear is detected.

But despite its full availability, HUD has been slow to take off. Currently, Federal Express is installing six systems to allow its overnight package service to fly more regularly into often fog-bound West Coast airports. Alaska Airlines, with similar requirements, has recently purchased eight systems with 12 more on order.

The "bottom line" in airline operation is generally the deciding factor where safety enhancements are concerned. The Flight Dynamics system could cost between \$170,000 to \$330,000, depending on the retrofit problems. JET's device for corporate aviation sells for about \$100,000, without any consideration for the replumbing.

It is, therefore, unfortunate to learn that safety has a price tag, particularly when the promise of tomorrow is already on the suppliers' shelves. As the two airlines prove the value of HUD, hopefully other operators will follow.

MARK PATFKY, who writes on aviation, is the author of "Investors' Guide to the Strategic Defense Initiative," to be published next month by KCI Communications in Arlington, Virginia.

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PCs Are Still Waiting At Executives' Door

By Sherry Buchanan

Soviets Set to Access the West

By Barry James

Turning Machines Into Experts

**By Richard Sharpe
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TechnologyWorkplace

Swedes Catch the Office Express

Employees' workday begins with the ride to corporate headquarters.

By Errol G. Rampersad

VASTERAS — The Asa Pendeln that pulls out of Stockholm's central railroad station on workdays has added a new dimension to commuting by bringing the office to commuters.

Clocking in on Platform 6 at 7:40 A.M., the office staff of Asa, Scandinavia's largest maker of heavy electrical equipment, take to their desks in what is the world's first and only railborne office. Their workday begins with the ride to corporate headquarters and their jobs in Vasteras, a former Viking trading town 130 kilometers (80 miles) away.

The luxuriously appointed carriage, outfitted at a cost of 4 million Swedish kronor (\$6.7 million), can seat 40 passengers. It is equipped with 26 ergonomically designed work stations, a special conference room and a lounge, which is decorated with pot plants and contemporary prints.

The coach is owned by Asa and is the first private passenger train to run on the state-owned railroad network, Statens Jernvägar.

The work stations are equipped with telephones connected to a conventional telephone exchange, which in turn is coupled to a mobile telephone system. It provides access to any country in the world, as well as Scandinavia's ubiquitous cellular phones in cars and boats. Riders can use electric typewriters as well as personal computers, with which they can gain access to data bases at corporate headquarters in Vasteras. Computers, armed with their diskettes, are in touch with a specially linked computer throughout the ride.

The office-on-wheels was the brainchild of 34-year-old Ann Larsson, a member of Asa's business development and corporate planning division, herself a Stockholm-Vasteras commuter. "It was a joke at first," she explained. "Then we thought, why not. It seemed crazy but it made sense."

Mrs. Larsson, who recalled her dread of having to drive from Stockholm to her offices in Vasteras through the ice and snow during the long and dark winters, said the idea of a mobile office came to her after she switched to commuting. "Many of us who preferred to live in the capital were not



Swedish commuters get all the amenities of the office as the scenery goes by.

happy about the three hours we wasted every day traveling back and forth to Vasteras," she recalled. "I felt a lot of valuable time and manpower was being wasted on commuting. I realized this time could better be used to benefit both employer and employees."

She presented the concept of a mobile office to Perry Barnevik, president and chief executive officer of Asa, who was receptive to the idea.

The train also ferries visitors traveling from Stockholm and Vasteras executives going to the capital for meetings and conferences. It travels back and forth six times a day.

Employees purchase a regular second-class roundtrip ticket, costing 160 kronor a day. Asa pays one-third and the rest is tax deductible. Half the time spent traveling — the trip to work — is deducted from the workday.

Since Asa manufactures locomotives, commuter trains and freight cars and is also involved in a new Swedish high-speed train project, the mobile office gave the company a rare opportunity for promoting its products.

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Lena Nilsson and Karolina Frielingsdorf went about their duties with customary efficiency, oblivious to the towering pines and sparkling lakes that flashed by. "We have gotten so used to our 'office' that we hardly ever miss the atmosphere of the conventional workplace," they said.

ASEA HOPES that its investment in the pendeln would help to attract the capital's university graduates to its offices in Vasteras, which, with its 120,000 inhabitants, is a one-company — Asa — town. Stockholm's find it rather boring, since there are few amenities for nightlife.

Last year, Asa, founded in 1883, ranked among the world's 10 leading electrical and electronics enterprises, with operations conducted through 346 companies, with a workforce of 71,000 employees. Approximately 70 percent of its sales are outside of Sweden. In a merger with Brown, Boveri & Co. of Baden, Switzerland, announced last month, Asa now becomes the largest in Europe, with a joint workforce of 160,000.

Greeting the announcement of the merger on a recent ride, Mrs. Larsson laughed at the suggestion of a railborne office between Baden and Vasteras.

ERROL G. RAMPERSAD is on the editorial staff of the International Herald Tribune.

Fully Automated Factory Goes Beyond the Dream

By Beth Karlin

WASHINGTON — For most international companies, the paperless factory remains a dream. Punch-pushing and paper-shuffling continue to inhibit productivity gains. But a handful of forward-looking companies are investing heavily to make automation a reality. They are computerizing and integrating everything from sales to manufacturing to shipping. And they are doing it on a worldwide basis. Early results are impressive.

At Tandem Computers, for example, productivity increased 340 percent and work-in-process throughput decreased from 19 weeks to less than two weeks as a result of extensive automation at its Watsonville, California, facility. Tandem's high level of office and manufacturing automation extends far beyond Watsonville to encompass — and unite via a sophisticated network — three domestic assembly plants and another in Neufahrn, West Germany, according to Jack Cundadi, Watsonville plant manager.

Successes by Cupertino, California-based Tandem and other innovators are encouraging more companies to expand computer integrated manufacturing. Such firms as ICL of Britain, N.V. Philips of the Netherlands and Siemens of West Germany are following suit. Indeed, European spending for automation is growing at a faster rate than in the United States, according to Dataquest Inc., a San Jose, California, market research firm.

Europe's speedier growth is due at least in part to the fact that it is making up for a slower start. But the declining value of the dollar, and corresponding increase in the price of foreign-made products in the United States, also is contributing to the new enthusiasm for automation in Europe. The only real way to lower prices, without lowering profit margins, is to cut production costs.

"They've had to automate," says David Penning, director of Dataquest's manufacturing automation service. "And while they've been making real changes, we've just been fooling around with currency. Once again, we've shot ourselves in the foot."

Total European spending for automation, including computers, software and manufacturing systems, will more than double to \$7.1 billion this year, from \$3.3 billion in 1983, according to Dataquest. By 1991, Dataquest predicts, European automation investment will climb nearly 50 percent more to \$10.5 billion.

U.S. spending, meanwhile, will increase 78 percent to \$17.8 billion, from \$10 billion between 1982 and 1987. Dataquest forecasts, however, that by the end of the decade, U.S. spending for factory automation will start increasing at a faster rate. By 1991, Mr. Penning estimates, the U.S. market will expand to \$28.3 billion.

In terms of total world market for manufacturing automation equipment, Dataquest says, the United States was first in 1986, with 51.5 percent of factory revenue; Asia was second, with 20.8 percent, and Europe was a close third with 20.6 percent. In factory automation unit shipments for 1986, the United States led with 33.5 percent; Asia was second with 20.5 percent, and Europe was third, with 19.8 percent.

How U.S. Systems Score Abroad

Foreign sales of American-made automated manufacturing equipment have grown from \$9 billion in 1982 to \$17 billion this year. By 1991, the market could exceed \$29 billion.

Destination	1982	1987*	1991*
United States	10	18	28
W. Europe	3	7	10.5
Asia	4	7.5	14
All other	1	2.5	5

Source: Dataquest

European demand for automation equipment has created profitable new markets for U.S. firms, particularly in computer-aided design and manufacturing (CAD/CAM). CAD/CAM is the essential first step in computer integrated manufacturing. The data generated by designers and engineers as they fashion products on a CAD system's video screen provide much of the information that is necessary to computerize the overall production planning effort. This includes manufacturing the tools, ordering the raw materials and scheduling the production runs.

"Exports [of CAD/CAM equipment] have grown at a tremendous pace," says Deborah Harris, an economist with the International Trade Commission. Foreign sales of U.S. products have skyrocketed from about \$243 million in 1980 to about \$1.6 billion in 1986, she said. U.S. CAD/CAM vendors dominate 70 percent of the West German market, for example, and 75 percent of the British market.

The benefits of computer integrated manufacturing are many, says Tandem's Mr. Cundadi. Assembly and test operations at the computermaker's Austin facility, for instance, are entirely tracked and controlled without paper. Wands are used to read bar code labels affixed to subassemblies and other work in process. As a result, the computer records — and any worker who wants to know can instantly learn — where the work has been, where it is and where it is headed.

Via computer, Tandem officials can learn everything from the raw material to finished goods inventories at any of the other plants.

BETH KARLIN is a Washington-based journalist who contributes regularly to Electronic Business and other technical publications.

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Technology Developments

Companies Try to Cash In on New High-Tech Carbon

By Vivian Lewis

PARIS — Takeover bids, joint ventures, international acquisitions, know-how sales, are proliferating in the carbon business — but that is because carbon is becoming high-tech. British Petroleum has acquired Hiteco of the United States, which makes carbon-carbon engine nozzles. BASF of West Germany has bought Celanese, a leading U.S. carbon fiber manufacturer. Du Pont has also bought into the business.

A joint venture with Japan's Toray, Soficar, has been set up by Elf Pechiney in France. BASF has a composite joint venture with a rival Japanese firm, Toho Rayon, which has also licensed Enka of the Netherlands. A new U.S.

cause they require one-tenth the density for comparable performance.

In current Airbus production, composites account for 18 percent of the total weight of the planes — the A320, A330-34 and ATR models. Two years ago, they accounted for only 9 percent. Industry sources estimate that composites will account for 30 to 40 percent of the total for the next civil aircraft generation — fuselage, brakes, wings, ailerons, tail, jet housings, ducts, landing gear housings.

In military aviation, composites are used more widely. For example, in the Dassault Rafale model, composites account for 24 percent of the weight, compared to only 7 percent in the Mirage 2000. Every Rafale in current production uses 2,083 pounds of composites.

In the United States, aerospace accounts for 60 percent of the carbon fiber market, and in Europe for 55 percent. Only in the Far East are sporting goods the major market.

The current market for carbon fibers is about 4,400 tons annually — 2,300 in the United States, 1,250 in Japan, 750 in Europe. By 1990, the market is expected to reach 6,800 tons; by 1995, up to 11,200.

Growth is expected to be fastest in Europe and in countries not included in the geographical breakdown, like China, Israel, Brazil and South Africa — from a lower base. By 1995, America's will be up 150 percent and Europe's will nearly quadruple.

Carbon fibers were invented in Europe but the inventor, British, has lost rank in developing it. The development of carbon fibers was started in the early 1940s by the RAE research center in Farnborough, England, and was brought into commercial use by the Hysol-Grafil joint venture of the British chemical firm Croton and Duxter Hysol, a U.S.-based company in Pittsburg, California.

Hysol-Grafil is still the leading European producer, with a rated capacity of 350 tons a year at Coventry and a further 300 tons produced at Sacramento, California. In addition it has sold licenses to producers from Shanghai and Finland to South America. It also dominates the production of the resin used to make the high-tech version of carbon fiber, called Pan (for polyacrylonitrile). There also is a lower grade felt-like version, called pitch, which is less pure, cheaper and more widely used.

But in the world carbon fiber league, the top producers are Japanese: Toray, at 1,500 tons, with a further 360 tons produced under license by Amoco in the United States and 300 tons by a joint venture in France; Toho Rayon at 1,380 tons, with a further 350 tons being brought into production by Enka in the Netherlands, or Amoco, starting with the Hercules plant in Bechtel, Utah, at 1,050 tons a year, and followed by the Celanese-BASF plant at Rockhill, South Carolina, at 450 tons a year.

In an attempt to catch up in carbon fiber, the French government in 1981 supported the establishment of two joint ventures, one with Hercules by Pechiney, and the other with Toray by Elf.

But then it became clear that the market was not doubling every year and that two factories competing with each other would be catastrophic. Since Elf, an oil company, is government controlled, and Pechiney is nationalized, the government could stitch together a complicated three-way joint venture, and Hercules was persuaded to pull out in 1984. Soficar still must buy both the carbon fiber and the knowhow to process it from Toray.

By scrupulously following Japanese production methods, Soficar three years later is producing material up to Japanese levels. Last year Boeing qualified output from the Soficar plant for use on its planes, and in June, qualification was given by Aerospatiale and Dassault in France. Soficar is still working on gaining qualifications from MBB of West Germany,

which builds composite parts for the Airbus.

The state got involved in the technology purchases to increase the French role in making composites for the military. But now that access to the material is greater, the French are working on new uses for carbon-carbon composites. For example, Carbone Industrie, a joint venture of Alstom and Messier-Hispano-Bugatti,

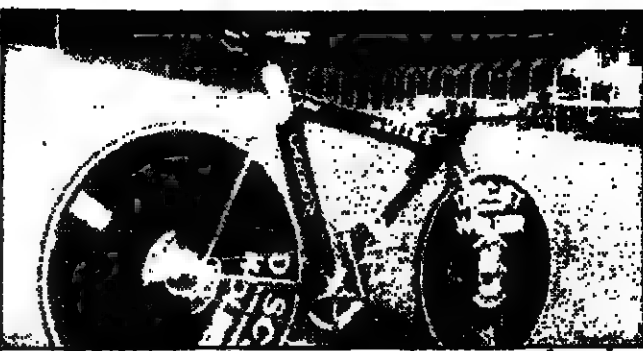
making carbon-carbon aviation and racing-car brake systems, is about to sign a contract to provide braking systems for a standard luxury car with an as-yet unnamed French producer.

Officials of the firm calculate that saving a pound in producing a car is worth \$125 to \$250 over its life.

Alstom is also working on a braking system for the newer, fast-

er version of the TGV train, which will go at up to 350 kilometers (217 miles) an hour, compared to 250 to 270 kilometers for the current Paris-Lyon train.

VIVIAN LEWIS is a financial journalist who reported on European business from Paris for many years. She is now based in Washington.



Fiber carbons can be used for airplanes — or bicycles.

In civil aviation, carbon fibers are replacing light metals.

French composites joint venture has been set up with Ferro Corp. by Alstom.

Pure carbon (graphite) filaments used to be used merely to make incandescent light bulbs. Now they are being stretched and spun out into fibers, sized, grafted, textured and matted to make felt. They are woven alone or with plastics or metals to make cloth.

They are coated, layered, soaked with resins, vacuum-cooked, dehydrogenated, polymerized, baked at ever higher temperatures — up to 2,000 degrees Centigrade (3,632 degrees Fahrenheit) — lined with other new materials like Kevlar or fiberglass or epoxy, sandwiched around foams, machined, molded and rolled in a host of new, labor-intensive processes to produce new carbon materials.

Tailoring carbon fibers and carbon composites produces costly materials that are incredibly light and that have properties similar or better than those of metals in resisting heat, abrasion, pressure and chemicals.

Pure carbon has a "miraculous" feature, since its friction coefficient rises with temperature, making it ideal for brakes.

Production is semi-artisanal, measured in hundreds of tons, whereas most chemicals are produced in millions of tons, and prices are high, ranging from \$1.50 to \$15 per pound for composites used in the sports industry, and \$20 to \$220 per pound for aerospace composites and carbon fiber. This compares with about \$4.50 per pound for special steels.

Given their high price, carbon fiber and carbon-carbon composites materials can replace metals where losing weight is worth paying for: mostly airplanes and missiles, but also sports equipment, such as golf club shafts, arrows, bicycles and tennis rackets.

For airplanes, saving one pound in construction is worth \$250 to \$500 during operating life. As a result, the use of carbon fibers in planes has mushroomed. In civil aviation, carbon fibers are increasingly replacing light metals like titanium, despite their cost, be-

In the beginning, fabled designer Coco Chanel orchestrated the development of each fragrance that bore her name and personally inspected every stitch of her innovative fashions shown in her Paris rue Cambon salon. The House of CHANEL is now a world-renowned institution, but its commitment to quality, service and the small but vital detail remains unequalled.

CHANEL still depends on personal craftsmanship to produce many of its famous products. But now, those processes that can be entrusted to modern methods are entrusted to Unisys.

"It's a perfect marriage of high tech and high fashion," says Prakash Trivedi.

His Unisys team worked with CHANEL to develop an on-line inventory and manufacturing system that enables The House of CHANEL to monitor production standards and to keep track of goods that are shipped to stores and CHANEL Boutiques across the country.

"Efficiency is the key word." Manufacturing specifications for the company's famous perfumes, including CHANEL N° 5, are stored in Unisys microcomputers in Piscataway, N.J. The microcomputers also are used to evaluate perfume samples as they come off the assembly line. A mainframe system then monitors the manufacturing and distribution of products.

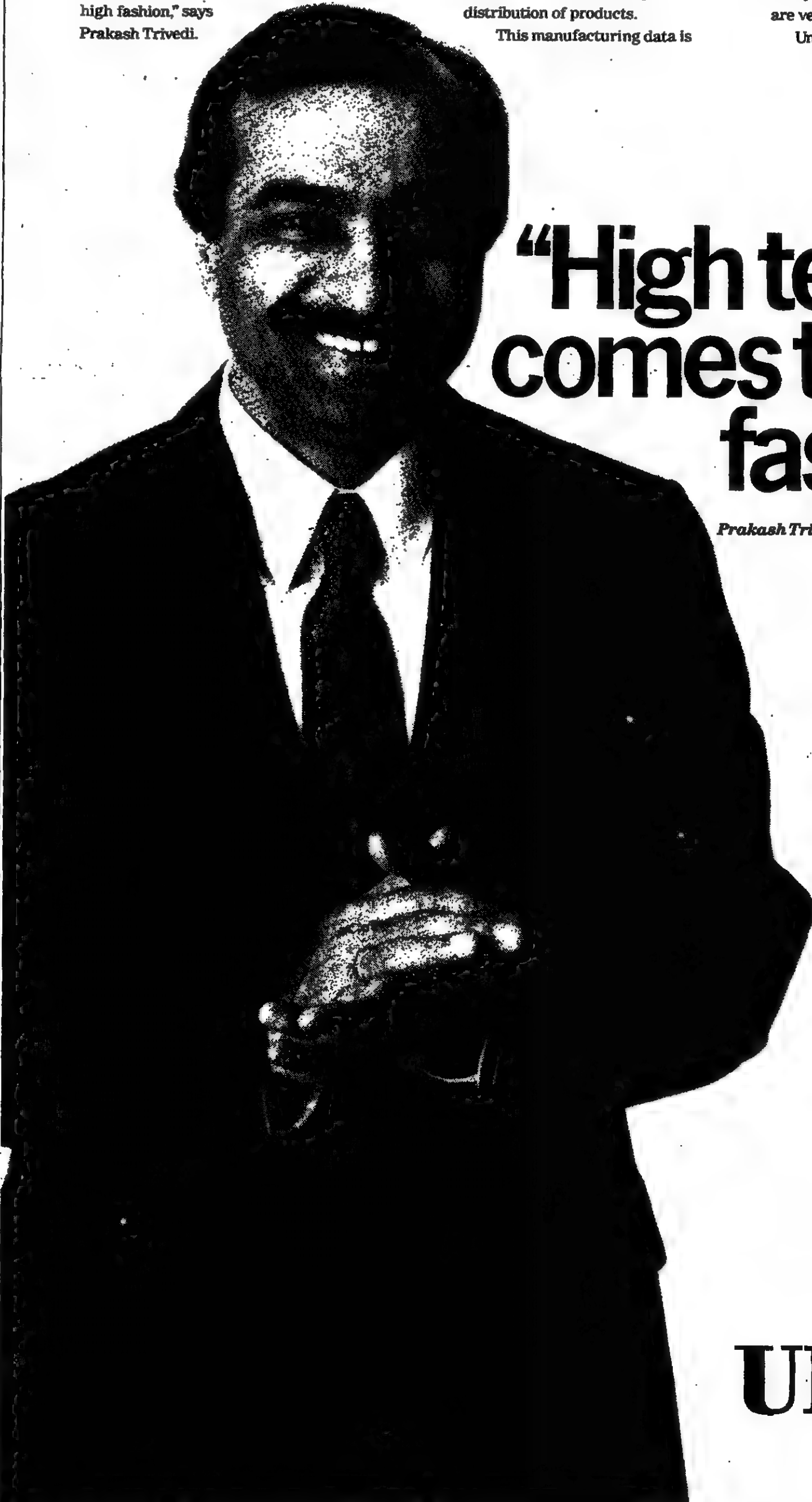
This manufacturing data is

immediately available to company executives, along with information from micro-computers in CHANEL Boutiques across the country, providing an up-to-the-minute inventory database. It used to take three to four days for this information to reach executive desks.

"By having the data to make better, more-informed decisions, profits have increased while the high level of product excellence and customer service has been maintained," says Trivedi.

CHANEL has long been familiar with the sweet smell of success. And now with Unisys, CHANEL has found that computers are very much in style.

Unisys and manufacturing. The power of 2.



"High tech comes to high fashion."

Prakash Trivedi, Branch Sales Manager, Unisys.

UNISYS

The power of 2

Ozone Pact in Doubt

Continued from page 7

reached in Geneva in April to reduce CFC production and consumption. The pact would freeze production at 1986 levels beginning in 1990, with a 50 percent decrease over the next five years.

"I think there is a good chance of getting an agreement signed," Daniel J. Dudek, senior economist of the nonprofit Environmental Defense Fund of New York City, said earlier. Mr. Dudek and other environmental officials acknowledge that there is some opposition, both from industrial producers and users as well as from underdeveloped countries. These countries may be given more time to deal with the effects of drastically reduced CFC production.

The British and German chemical industries question the need for curbs and fear that they will unfairly benefit the U.S. chemical giant E.I. du Pont de Nemours and Co. Du Pont has recently stepped up research on CFC substitutes and says that it can provide ecologically sound alternatives on a commercial basis in five years. The European companies say it will take them 10 to 15 years to catch up.

Until recently, the United States had galvanized efforts to reach an accord.

But in May, the U.S. interior secretary, Donald P. Hodel, proposed an alternate "personal protection" program against ultraviolet radiation using sunglasses, hats and sun-screening lotions.

Mr. Hodel said he believed an accord might counteract President

Ronald Reagan's philosophy of reducing government regulation. These suggestions, however, provoked amusement and even scorn from environmentalists.

"Hodel actually did a great service to the issue by pointing up the absurdity of a 'no action' alternative," Mr. Dudek said. "When they began to check the cost of sunglasses and sun screens for people, they began figuring on \$50 to \$60 a person. And on that basis nationwide, you can get into some real fancy numbers."

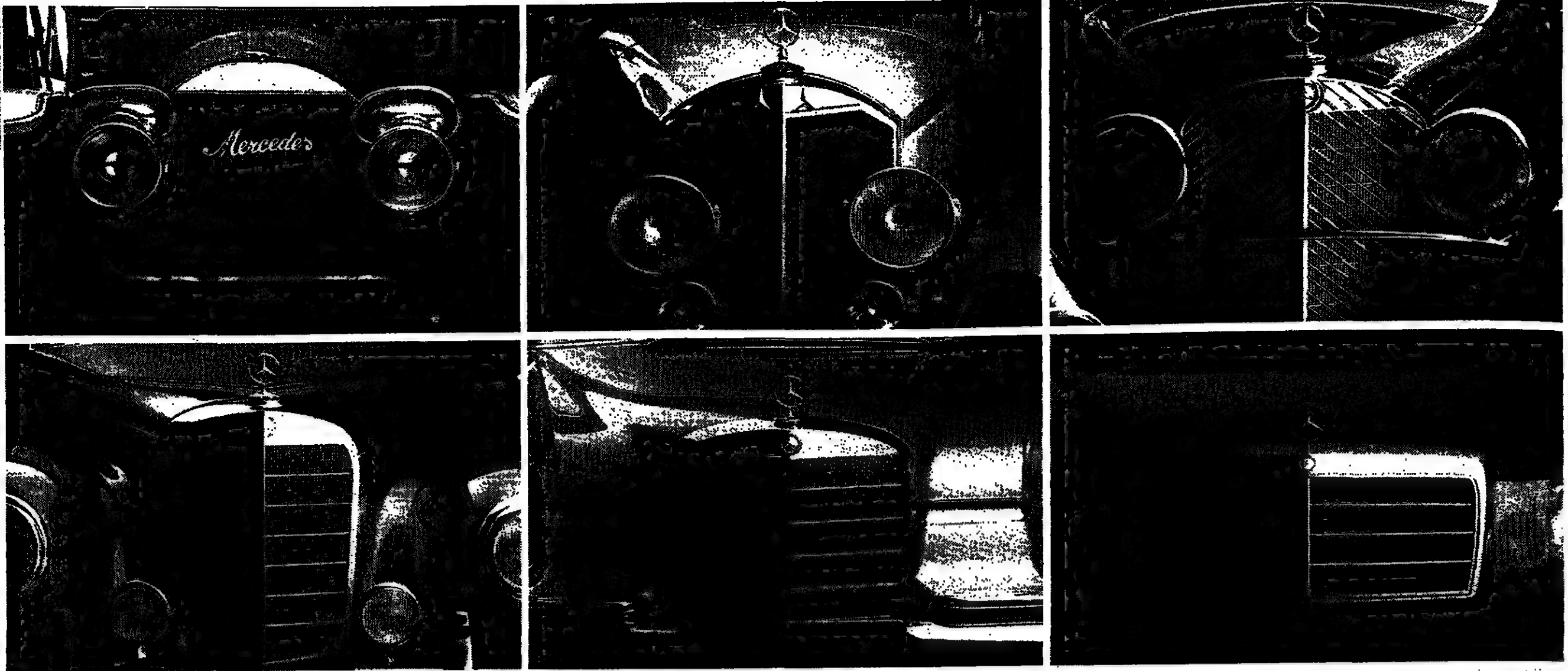
Scientific analysis and international diplomacy appear to be ahead of sunglasses and sun screens in the battle against ozone depletion, Mr. Dudek and other environmentalists say. Despite Mr. Hodel's comments, the U.S. State Department and the Environmental Protection Agency remain committed to an accord, with the support of large industrial concerns.

Meanwhile, the European Community, under pressure from West Germany, the Netherlands and Denmark, has recently endorsed a tighter schedule of reductions in CFCs.

At the same time, a move toward accommodating Third World concerns may also ease the path to an accord. Limited exemptions could ease Third World fears that drastic reductions in CFCs could harm their fledgling chemical, consumer, computer and refrigeration sectors, environmental officials say.

THOMAS NETTER is a journalist based in Geneva.

Search Effort



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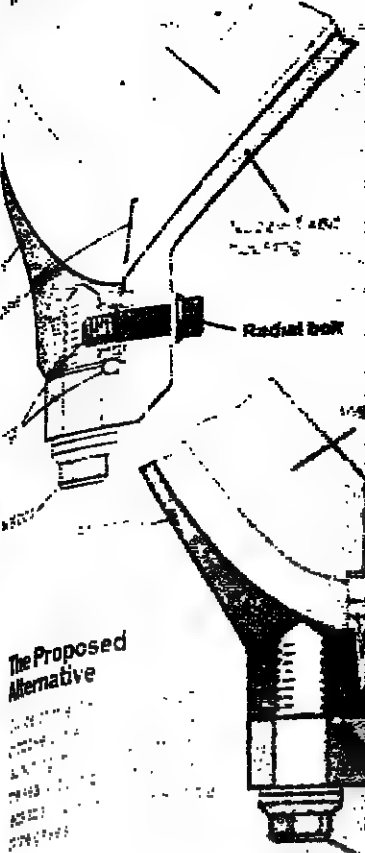
We will ensure the best technical advancement in automotive engineering and the growth of our company by opening up new opportunities in future-oriented fields of activity.

Not size but innovation, high-tech-

nology and high quality are important for the successful development of our company and for strengthening our future competitiveness. So we make sure that in the future good ideas will not become a matter of chance and innovation will remain our tradition.



Trubled Booster: Another Sea



huttle Safety

metal-to-metal bolts has been effective, even rubber seal and for extra protection it will demonstrate it worked as Roy we are testing a

Members of search Council Boujoly's firm design and its

Possible

WASHINGTON body proteins is malaria, a find save hundreds

Studies indicate cachectic is an researchers with Geneva in Swiss other agents malaria, second cerebral complex even though the There are no worldwide such

Birth De

CHICAGO day do not pay small amounts to scientists of

They analyze women and for same risk of drinking, not on a weekend spontaneous at

"We did find even in light situations," said Dr. dation to women clearly do not

Starfish

DURHAM, zoologist is producing a co Charles Wal

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The starfish legs where spe Walker said the humans than th

Swiss made with chaper The new le an ultra-sh gas reserv writing tool in glowing

EC Tel. (022)

McDonald responds that the

SCIENCE

The Surgical Saga of the Siamese Twins

By Jane E. Brody
New York Times Service

THE historic surgery Saturday and Sunday that successfully separated 7-month-old Siamese twins joined at the head actually began in West Germany five months ago. Last spring, a team of physicians from Johns Hopkins Hospital in Baltimore visited the infants and devised a unique operative plan that they thought could separate them without causing lasting brain damage.

Almost immediately, the doctors began a procedure to slowly stretch the babies' skin sufficiently to cover an operative wound.

Then came months of preparation and lengthy dress rehearsals using dolls attached at the heads with Velcro. One small mistake could mean permanent damage or even death for one or both of the otherwise healthy babies.

Dr. Mark Rogers, the physician who choreographed the final plan, likened it to "a complex military maneuver" in which anesthesiologists, cardiac surgeons, neurosurgeons, plastic surgeons, nurses, technicians and clerks were "trained to provide the proper input" when it was needed.

The separation surgery was scheduled for the Labor Day weekend, when no elective surgery is planned and the 70 professionals needed in the cramped operating room, the 70 others in support, and the 60 units of blood and blood components required could be dedicated to the twins.

"Independent of the success of this operation, our ability to plan something as complex as this taught us that we can accomplish much more than any of us thought we could," Dr. Rogers said after completing the 22-hour procedure.

Later Monday afternoon, 36 hours after their surgical ordeal came to an end, the babies, Patrick and Benjamin Binder, were in critical but stable condition in the pediatric intensive care unit. The babies still face such risks as blood clots, intracranial bleeding, heart complications, uncontrollable brain swelling and overwhelming infection.



Dr. Mark Rogers with the dolls used to rehearse surgery.

After the operation, which ended at 5:15 A.M. Sunday, the extensive head wounds, approximately 16 inches (41 centimeters) in circumference, continued to ooze blood, according to Dr. Ben Carson, the pediatric neurosurgeon who had surgically divided the shared brain tissue. But he said his colleagues had been able to stop the extensive bleeding that had complicated the end of the difficult surgery.

To try to prevent permanent brain damage, a complication of previous attempts to separate Siamese twins joined at the head, the Johns Hopkins team had combined

was done in 56 minutes and the other in 63," Dr. Carson said.

Then came an even scarier moment. Once the babies' hearts were restarted, they bled profusely from all the tiny blood vessels in the brain that had been severed during the surgery. First after pituitary was needed, nearly exhausting the supplies; participants in and out of the operating room volunteered more.

At the same time, the babies' surgically traumatized brains began to swell dramatically.

So it was decided to end the surgery as soon as possible, rather than pursue the original plan to fit the babies immediately with custom-designed metallic mesh skull coverings.

According to Dr. Craig Dufresne, the plastic surgeon who had designed the coverings using a Cemax computer, a second operation to create a cosmetically acceptable skull will be done at a later date, assuming the babies continue to recover normally. Once in place, the babies' skull bones will grow into and around the mesh, which will never require removal, the plastic surgeon said.

Before the separation surgery could be undertaken, a section of the hospital needed to be rewired. "We tried to anticipate everything," Dr. Rogers explained.

"Like what would happen if there were a power failure during the surgery. With all the machines we were using, we could easily have overtaxed the operating room's electric system."

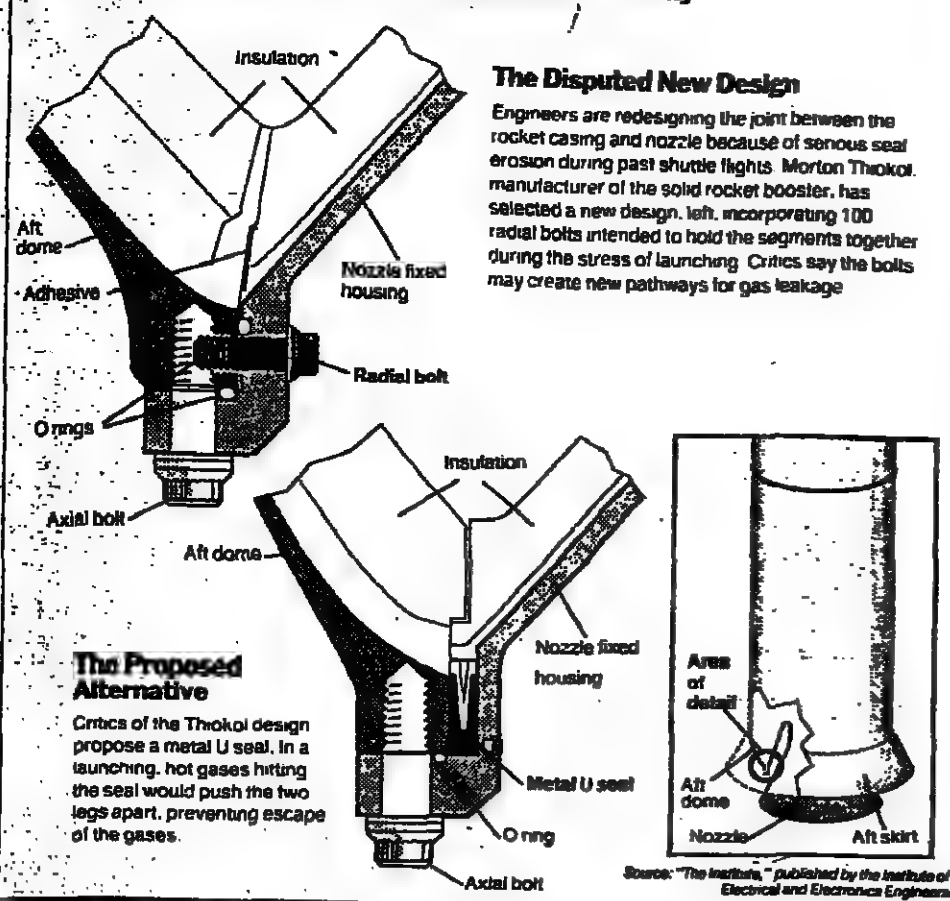
But throughout the planning, the central concern remained the babies' neurological status. "We decided in advance not to proceed unless we thought we could separate them without compromising the neurological function of either baby," Dr. Rogers said. Until the infants' brains were actually exposed during the operation, the surgeons could not be certain that parts of critical brain tissue, such as the vision center, were separate.

Fortunately, they turned out to share only a main drainage system, called the sagittal superior sinus, and a critically important vein.

Dottie Lappe, the acting head nurse of the pediatric intensive care unit, who cared for the Binder babies before their surgery as well as after, described them as "happy, smiling, playful infants who laughed and cried like other babies." Except for their immobility, she said, they were at the right developmental stage for their age.

"Everything in the surgery went as planned and as well as we could have hoped for," Dr. Carson said. "The rest is up to God."

Troubled Booster: Another Seam Under Scrutiny



The Proposed Alternative

Critics of the Thiokol design propose a metal U seal. In a launching, hot gases hitting the seal would push the two legs apart, preventing escape of the gases.

Source: "The Insult," published by the Institute of Electrical and Electronics Engineers

Steve Hirt, The New York Times

Shuttle Safety Debate Persists

By David E. Sanger
New York Times Service

EVEN as engineers dissect the space shuttle booster rocket fired in Utah recently, debate continues over one element of the rocket redesign that some engineers suggest poses as many hazards as it eliminates.

The debate does not center on the joints that failed in the Challenger accident, but on another crucial seam, at the aft end of the rocket, where the nozzle is attached. In shuttle flights before the Jan. 28, 1986, accident, the awkwardly shaped "nozzle-to-case" joint was the site of some of the most serious in-flight erosion of safety seals. Revamping the nozzle joint, which cannot be seen from outside the rocket, has been one of the stickiest problems facing Morton Thiokol Inc., the manufacturer.

A new design, incorporating an extra O-ring, 100 bolts to hold the joint together, and other changes, has been adopted by Thiokol with the endorsement of Allan J. McDonald, one of the Thiokol engineers who warned against launching the Challenger. But the new design has been criticized by Roger Boisjoly, a former Thiokol engineer who also argued against the ill-fated Challenger flight.

Both men have a significant stake in their opinions: Mr. McDonald serves as chief of Thiokol's redesign team and Mr. Boisjoly resigned from the company after the disaster, filing suit against it for fraud and defamation.

The engineers' disagreement was a subject of informal discussion last week among rocket specialists who gathered in the Utah desert to watch the first test-firing of the revamped rocket. While most experts concluded that the path chosen by Mr. McDonald's team at Thiokol would probably work, they said Mr. Boisjoly had pointed out real weaknesses. Even the independent National Research Council overseeing the redesign has its doubts about Thiokol's choices. At its prodding, the company has issued a subcontract to Veto Gray Inc. of Houston to design and test an alternate nozzle joint that substitutes high-temperature metal alloy seals for the primary rubber O-ring in the Thiokol design.

"If we were starting from scratch and had plenty of time, the metal seal would probably be the way to go," one member of the panel said last week, insisting on anonymity. "As it is, the metal seal is the first backup plan."

Under the pressure of launching, the two segments sometimes separated a fraction of an inch, and hot gases began to erode the rubber O-rings. Had those rings burned entirely through, few doubt the shuttle would have been destroyed.

To prevent the problem from recurring, engineers have redesigned insulation around the joint using a "J-seal" that should prevent any hot gas from getting near the O-rings. A third O-ring has been added as a "wiper seal" to prevent contaminants from getting into the joint during assembly. And most importantly, 100 bolts have been added around the joint.

Mr. Boisjoly's criticisms are focused on the new radial bolts. In the redesign, the bolts are placed between the primary O-ring in the joint, intended to stop the flow of hot gas, and the secondary O-ring that provides a backup.

"They cripple the redundancy of the secondary seal in 100 places," Mr. Boisjoly said. In other words, each bolt provides a potential leak path for any hot gas that makes it around the primary O-ring.

"It's like tightening the bolts on a car wheel," he said. "You do one side, then go to an opposite bolt and tighten that," he said. But as each of the 100 bolts in the nozzle joint is connected, Mr. Boisjoly said, the joint itself could be deformed, "creating tremendous stresses in the whole part."

"Murphy's Law awaits them," he maintained. "If they're right, then they are heroes and I'm a bum. And that's O.K. If I'm right, more people could die."

Mr. McDonald responds that the

metal-to-metal seal formed by the bolts has been tested and shown to be effective, even without the Viton rubber seal around the bolt heads for extra protection. "We are confident it will work, and that tests can demonstrate it works. But we are as worried as Roger is, so that is why we are testing alternatives."

Members of the National Research Council say they believe Mr. Boisjoly's fears about the Thiokol design and its bolts may be exaggerated, because bolts like that have proved successful elsewhere in the shuttle. Nonetheless, they acknowledge that the bolts could bend the joint out of shape, and that bolt holes could weaken the overall steel case structure.

"That's why we conduct tests," a member of the panel said. "Of course," he added, "the booster was tested extensively before the shuttle accident, too. And look what happened."

IN BRIEF

Possible Key Found to Malaria Deaths

WASHINGTON (AP)—Scientists have discovered that a natural body protein is likely a major cause of the deadliest complication of malaria, a finding that suggests that blocking the chemical's action might save hundreds of thousands of lives each year.

Studies indicate a protein called tumor necrosis factor (TNF) or cachectin is an essential element in highly fatal cerebral malaria, said researchers with the World Health Organization and the University of Geneva in Switzerland. Blocking the protein's action with antibodies or other agents might be a new way to treat the most fatal complication of malaria, according to a report in the journal *Science*. Estimates are that cerebral complications account for more than half of all malaria deaths even though the condition develops in less than 1 percent of cases overall. There are an estimated 100 million estimated new cases of malaria worldwide each year, with one million resulting in death.

Birth Defect-Alcohol Links Studied

CHICAGO (UPI)—Pregnant women who have one or two drinks a day do not put their babies at greater risk for most birth defects but even small amounts of alcohol may be linked to one malformation, according to scientists at the National Institute of Child Health and Development. They analyzed the drinking habits and pregnancy outcomes of 32,870 women and found that those who had two drinks or less a day had the same risk of birth defects overall as women who did not drink. Binge drinking, not drinking during the week but drinking seven or eight drinks on a weekend, was cited as most dangerous, with effects including spontaneous abortions, still births, low birth weight and other risks.

"We did find a direct relationship between the amount of drinking—even in light amounts—and an increased risk of urogenital malformations," said Dr. James Mills, an institute epidemiologist. "My recommendation to women would still be don't drink when you're pregnant. We still clearly do not know enough about this."

Starfish Used in Male Pill Research

DURHAM, New Hampshire (AP)—A University of New Hampshire zoologist is using the common northern starfish in research aimed at producing a contraceptive pill for human males.

Charles Walker is studying sperm production by starfish because, unlike human males, it produces sperm only once a year. He is trying to find the chemical trigger that tells the cells when to divide and form sperm. He believes that a similar process occurs in humans and a pill to block a chemical trigger should have fewer side effects than hormones such as steroids.

The starfish has the advantage of having two organs in each of its five legs where sperm are produced, making it a useful lab specimen. Mr. Walker said the starfish also is in a more direct evolutionary line with humans than the fruit fly and other animals used in similar research.



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NYSE Most Actives					
Vol.	High	Low	Last	Chg.	
AmesDep	38000	18 1/4	17 3/4	-1/4	
IBM	20147	10 1/2	10 1/4	-1/4	
AT&T	20147	10 1/2	10 1/4	-1/4	
GE	20147	10 1/2	10 1/4	-1/4	
IBM	20147	10 1/2	10 1/4	-1/4	
AT&T	20147	10 1/2	10 1/4	-1/4	
GE	20147	10 1/2	10 1/4	-1/4	
IBM	20147	10 1/2	10 1/4	-1/4	
AT&T	20147	10 1/2	10 1/4	-1/4	
GE	20147	10 1/2	10 1/4	-1/4	

Market Sales		
NYSE 3 p.m. volume	NYSE 4 p.m. volume	NYSE 5 p.m. volume
127,150,000	27,400,000	11,100,000
NYSE adv. cons. sales	11,100,000	11,100,000
NYSE adv. cons. sales	11,100,000	11,100,000
NYSE adv. cons. sales	11,100,000	11,100,000

NYSE Index			
High	Low	Close	Chg.
274.49	274.41	274.49	+0.08
274.49	274.41	274.49	+0.08
274.49	274.41	274.49	+0.08

Wednesday's
NYSE
Closing
Via The Associated Press

AMEX Diary		
Class	Prev.	Chg.
Advanced	254	128
Declined	254	128
Unchanged	254	128
New Issues	254	128
New Low	254	128

NASDAQ Index			
Prev	Today	Week	Year
254	254	254	254
254	254	254	254
254	254	254	254

AMEX Most Actives					
Vol.	High	Low	Last	Chg.	
Delmar	1500	15 1/4	15 1/4	+1/4	
Telecom	1500	15 1/4	15 1/4	+1/4	
AT&T	1500	15 1/4	15 1/4	+1/4	
IBM	1500	15 1/4	15 1/4	+1/4	
GE	1500	15 1/4	15 1/4	+1/4	

Dow Jones Bond Averages			
Prev.	Today	Chg.	
84.5	84.5	0.0	
84.5	84.5	0.0	
84.5	84.5	0.0	

NYSE Diary		
Class	Prev.	Chg.
Advanced	254	128
Declined	254	128
Unchanged	254	128
New Issues	254	128
New Low	254	128

Odd-Lot Trading in N.Y.			
Buy	Sell	Net	Chg.
254	254	254	128
254	254	254	128
254	254	254	128

Dow Jones Averages			
Open	High	Low	Last
254	254	254	254
254	254	254	254
254	254	254	254

Standard & Poor's Index			
Prev.	Today	Week	Year
254	254	254	254
254	254	254	254
254	254	254	254

Previous NASDAQ Diary			
Class	Prev.	Chg.	
Advanced	254	128	
Declined	254	128	
Unchanged	254	128	
New Issues	254	128	
New Low	254	128	

AMEX Stock Index			
High	Low	Close	Chg.
254	254	254	128
254	254	254	128
254	254	254	128

12 Month High	Low	Stock	Div.	Yld. %	PE	52 Wk. High	Low	Close	Chg.
37 1/2	37 1/2	AAR	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AC	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AD	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AE	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AF	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4

N.Y. Stock Prices Move Higher

NEW YORK — Prices on the New York Stock Exchange edged higher Wednesday in volatile trading, overcoming concern about higher U.S. interest rates and the dollar's stability.

The Dow Jones industrial average rose 4.15 points to close at 2,549.27, according to preliminary figures, after declining 16.26 points on Tuesday. Two hours before the close the average was up 12 points.

Advances just edged declines, and volume fell to 163.70 million shares from 242.88 million on Tuesday.

Trading was choppy through the morning but a midday firming trend in bond prices supported modest afternoon gains for stocks. Traders said investors hunted for bargains, especially among blue-chip issues.

Even so, they said buying was kept in check by morning bond market weakness and by nervousness about the U.S. merchandise trade figures due on Friday. Economists are expecting the figures will show a deficit of about \$15 billion to \$16 billion.

Bond prices have fallen sharply in recent weeks on fears that the Federal Reserve Board is only beginning to push interest rates higher. Investors worry that the July trade deficit will be steep enough to push the dollar into another decline and the Fed into another tightening move.

The Fed on Friday boosted its influential discount rate, charged on loans to financial institutions, to 6 percent from 5.5 percent.

At 3 P.M., Ames Department Stores was the most active NYSE-listed issue, falling 3/4 to 18 1/4. Late Tuesday, the company reported a sharp drop in second-quarter earnings.

Among blue-chips, AT&T, General Electric, USX, American Express and Coca-Cola were ahead. IBM, Eastman Kodak, Union Carbide and Philip Morris were lower.

Digital Equipment was off a bit. At its trade show in Boston, it introduced two new computers in its Microvax computer family and two new computer work stations.

Among other computer issues, Cray Research was off slightly. Unisys, Compaq Computer and Hewlett-Packard were ahead.

Pennell Knitting was up sharply. Pennell said that it hired Merrill Lynch Capital Markets to evaluate the possible sale of the company.

Airline issues strengthened on news that AMR, parent of American Airlines, plans to boost fares in a class of one-way discount fares. Other carriers said they would match the hikes. AMR and Delta were up. Texas Air, trading on the American Stock Exchange, was gaining.

Newmont Mining was up. It rose 1 1/4 Tuesday when a group led by T. Boone Pickens began a cash tender offer for 28 million shares of Newmont at \$95 a share.

Deemed led the Amex actives, advancing. In over-the-counter trading, Walbro moved higher. UTS, a private New York firm, began a \$27.25-a-share tender offer for 2.1 million Walbro shares. Walbro, a maker of carburetors and fuel pumps, has 3.5 million shares outstanding.

12 Month High	Low	Stock	Div.	Yld. %	PE	52 Wk. High	Low	Close	Chg.
37 1/2	37 1/2	AAR	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AC	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AD	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AE	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AF	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4

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37 1/2	37 1/2	AD	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AE	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AF	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4

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37 1/2	37 1/2	AE	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4
37 1/2	37 1/2	AF	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4

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37 1/2	37 1/2	AF	1.50	1.50	11.0	37 1/2	37 1/2	37 1/2	+1/4

FROM AUDIO EQUIPMENT

FRIDAY, SEPTEMBER 10, 1987

Company 'Lifers' I Their Maximum Salary

By SHERRY BUCHAN

LONDON — To be a one-company man, you must be a "lifer." That's the message of a new survey by the International Management Development Institute (IMDI) which found that 28 percent of executives in the U.S. are "lifers," meaning they have spent their entire working lives with one company.

The survey, which is the first of its kind, found that 28 percent of executives in the U.S. are "lifers," meaning they have spent their entire working lives with one company. The survey also found that 28 percent of executives in the U.S. are "lifers," meaning they have spent their entire working lives with one company.

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THURSDAY, SEPTEMBER 10, 1987

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INTERNATIONAL MANAGER

Company 'Lifers' Losing Their Maximum Security

By SHERRY BUCHANAN
International Herald Tribune

LONDON — To be a one-company employee, the "womb to tomb" type, was once the safest and, often, the most rewarding way to live one's working life. The lifer was guaranteed promotions, salary increases and a good retirement package.

Today, with mergers, takeovers and restructurings causing even long-serving employees to lose their jobs, it can be a hazardous occupation.

Of course, for some who rise through the ranks of a single company, there still are rewards: 28 percent of U.S. chief executives advanced through the company they now head, according to a 1987 survey by Heidrick & Struggles, an executive recruitment company that polled chief executives from Fortune magazine's list of the 1,000-largest U.S. companies.

If executives lose motivation, it is the company's fault, one manager says.

Similar results came from the Executive Profile compiled by Korn/Ferry International, another recruitment company. It found that 24.2 percent of senior U.S. executives have been with one company throughout their careers, only slightly less than the 26 percent in 1979.

Although there are no similar figures on the number of career changes by senior British, French or West German executives, Korn/Ferry International's 1987 survey of British board members shows that 23 percent of British chief executives have been with their present company more than 30 years, which is similar to the U.S. figure.

But what about those who do not make it to the top? Most big European manufacturing companies, such as Siemens AG, Imperial Chemical Industries PLC, British Petroleum Co., Royal Dutch/Shell Group, and Volvo AB, where lifers still make up the majority of senior managers, recognize that once ambitious executives can lose motivation.

TO SPUR these executives, these companies rely mainly on lateral moves within their huge enterprises. One personnel officer at Siemens called it the luxury of having its "own internal labor market."

"I don't think there is a big problem of demotivation," said Tony Cox, head of British employment relations for ICI. "If there is, then it's the organization's problem more than the individual's." Mr. Cox, who has spent his 32-year career at ICI, said that a majority of its senior executives have been with the company their whole lives, including their current chairman.

Restructured companies have an additional problem: dealing with demoralized survivors and reassuring those coming up the ladder that a lifelong career there is still possible. One way in which large companies can retain loyalty and goodwill is by offering those who are leaving attractive packages for early retirement. These packages would replace some of the pension benefits that helped tie them to the company in the first place.

"There was sadness but no disillusionment," said Mr. Cox of the cutbacks at ICI which took place from 1981 to 1984, when 2,000 senior managers, many of them lifers, were let go. "We can still offer an environment of stable employment to people."

For those lifers who do not survive restructurings and mergers, life on the outside is even more perilous. They often find they have two counts against them, according to executive placement companies and personnel experts: age and the fact they have been with one company their entire lives.

New employers often assume that a lifer, traditionally age 45 to 65, is less productive, less creative and less willing to adjust to new ideas. One notable exception is Lee Iacocca, a former Ford

See LIFERS, Page 19

Does GATT Have a Future?

As U.S. Fights to Revive Free Trade Code, Many Say Reality Has Killed It

By Susan F. Rasky
New York Times Service

WASHINGTON — Forty-six years ago last month, on a ship in the North Atlantic, Franklin D. Roosevelt and Winston Churchill drew up a statement of eight common principles on which they based their hopes for mankind after World War II.

On the subject of trade, the Atlantic Charter pledged the United States and Britain to "endeavor, with due respect for their existing obligations, to further the enjoyment by all states, great or small, victor or vanquished, of access, on equal terms, to the trade and to the raw materials of the world which are needed for their economic prosperity."

Something was bound to be lost in translating those lofty sentiments to precise commitments. But for most of the past four decades, the trading system that grew out of the war's ashes has served both countries and their trading partners well.

That system is governed by a 1948 accord known as the General Agreement on Tariffs and Trade, a sort of international code of commercial conduct to which 94 nations now subscribe.

Under its rubric, the member nations have negotiated seven rounds of tariff reductions resulting in an estimated 90 percent decline in tariffs over the past 40 years. In the same period, the volume of global trade has increased tenfold.

But in the economic order of the 1980s, services such as banking and insurance account for one quarter of international trade. The fastest-growing markets are across the Pacific, not the Atlantic, and the mounting barriers to free trade are cultural and institutional, not numbers on a tariff schedule.

With the United States no longer the pre-eminent economic power, these changes have helped to splinter the trading alliance into numerous warring camps. Pressures to protect home markets have grown as some GATT members, notably Japan, pile up enormous trade surpluses and the United States watches its trade deficit mount.

Under such circumstances, the relevance, let alone the effectiveness, of a trading code based on Anglo-American sensibilities and economic structures is under attack. The Reagan administration has responded by galvanizing GATT members into a new round of global negotiations that began in September 1986 and address those problems. The talks, which are scheduled to last four years but could well take longer, are aimed at revamping GATT's structure and practices for setting disputes.

But in the business and academic communities, and of late in the U.S. presidential campaign, the call has gone out for more extreme approaches. Some U.S. critics are seeking to subordinate GATT, or even end it entirely, in favor of bilateral trade agreements tailored to the specific economic circumstances that the United States encounters among its various trading partners.

"I think of GATT increasingly as an intellectual Potemkin Village," said Pat Choate, director of policy analysis for TRW Inc. and an adviser to several of the Democratic presidential hopefuls. "When the GATT was set up, the United States, Britain and Canada had 60 percent of the world's industrial capacity," he said. "We established a trading system in our own image. The world has changed, but our outlook and our institutions have not. More and more of the problems we face in world trade cannot and will not be dealt with under GATT."

Clyde V. Prestowitz, a former counselor to the commerce secretary who left the Reagan administration last year to write a book on the



Roosevelt and Churchill meet aboard the USS Augusta in 1941, setting the stage for a flood of postwar stories.

economic conflict between the United States and Japan, is even more blunt. "I think the GATT is dead. What we are doing now is fighting over its corpse," he said.

"It was a laudable, idealistic goal, and we have tried to make it work and clung to it in the face of all manner of provocation from our trading partners," Mr. Prestowitz said. "In pursuing this kind of dream, we have neglected our own economic health to the point where we are threatening our geopolitical health."

Four key principles underlie the GATT agreement: Trade without discrimination among all member countries; reliance on tariffs rather than import quotas or other import barriers to protect domestic industries when necessary; binding tariff concessions that cannot be rescinded without compensation to affected countries; and the resolution of trade disputes through consultation, conciliation and GATT settlement procedures.

Not all GATT critics are as harsh as Mr. Choate and Mr. Prestowitz. But even GATT supporters who say that the system is worth fighting to modify and preserve agree that it has fallen short on all four counts.

"The more complex trade has become, the more sophisticated the impediments have become, and, regrettably, GATT's own processes have not kept up," said Clayton K. Yeutter, the U.S. trade representative, who is a supporter of GATT.

In recent years, the failing that has received most attention is the dispute-settlement mechanism, a protracted, cumbersome process that conjures up images of the 19th-century British chancery courts pilloried by Charles Dickens in his novel "Bleak House."

Consider, for example, the celebrated pasta war. American pasta makers complained in 1981 that European pasta makers were gaining an increasing share of the U.S. market because of subsidies from the European Community that violated GATT rules. American trade lawyers considered the situation an open-and-shut case, but it still

See GATT, Page 21

Protectionism is fiercer than ever. The fastest-growing markets are in Asia, not the West, and trade barriers are often cultural. Under such circumstances, a code based on Anglo-American sensibilities may seem an anachronism.

Daimler to Seek A 5% Stake in France's Matra

By Ferdinand Proczman
International Herald Tribune

FRANKFURT — Daimler-Benz AG, the West German automaker, said Wednesday that it would try to acquire a 5 percent stake in the French electronics and defense conglomerate, Matra SA, from the French government.

The government, which nationalized Matra in 1981, has said that it plans to sell its 51 percent stake in the company, but a spokesman said Wednesday that he could not comment on the Daimler-Benz proposal until he had actually seen it.

It was unclear what a 5 percent stake in Matra would cost.

Meanwhile, in Tokyo, Mitsubishi Motors Corp. said it would set up a joint venture with Daimler in Japan to market Mercedes-Benz automobiles. It also said the companies are studying the feasibility of joint-production of Mitsubishi trucks in Europe and possible co-development of a light truck.

A Daimler spokesman confirmed that talks on possible cooperation between the two companies are underway, but stressed that no kind of decision has been made.

At a press conference at the Frankfurt International Auto Exhibition, Daimler-Benz's managing board chairman, said the planned acquisition of a stake in Matra, "is an example of our efforts to build up a European corporate structure, seen against the background of the international competitive landscape."

The primary feature of that "landscape," according to Mr. Reuter, is a vast and underutilized capacity to produce autos and trucks, which is forcing automakers around the world to shift their focus toward growth technologies which can be used in a number of

products ranging from autos and consumer electronics to space craft. "We're speaking from practical experience," Mr. Reuter said. "Daimler-Benz is working intensively on a strategy for the business areas of the future that stem from the combined knowhow of AEG, Daimler, Dornier and MTU," the company's core units.

Daimler acquired AEG, an electronics concern; the Dornier aerospace group; and Motoren & Turbinen Union GmbH, an aircraft engine builder, in 1985. The sudden expansion from automaker to high-technology concern was engineered by Mr. Reuter, who was the company's finance director at the time.

"Anyone who doesn't master microelectronics and certain other multiple-application technologies will lose out," he said. "And anyone who doesn't have these technologies in their products loses enormous potential and considerable growth prospects."

A Daimler-Mitsubishi link would fit with Mr. Reuter's assessment of the global automotive market. Mitsubishi, which is partly owned by Chrysler Corp., said the joint sales company would complement the existing Mercedes sales network in Japan, and that some Mitsubishi dealers would sell Mercedes on a dual franchise basis with the Japanese automaker.

Mitsubishi said the companies are considering producing its Delica trucks in Europe, with Daimler's assembly plants in Victoria and Barcelona, Spain as possible locations.

"This business tie-up enables Mitsubishi to further complement and broaden its product lineup in Japan," the company said. It said the aim of the joint European production was "to secure a foothold as a production site in Europe."

France Clears Capel Bid To Buy Paris Brokerage

By James Capel & Co.

PARIS — James Capel & Co., the London-based stock brokerage, has received permission from the French Treasury to buy a Paris brokerage, Dufour-Koller-Lacarrière SA, a Capel spokesman said Wednesday.

Capel, a unit of Hongkong & Shanghai Banking Corp., is the first firm to take advantage of proposals to allow eventual full ownership by foreign companies. It did not say how much it paid for the Dufour-Koller.

Separately, a spokesman for the Paris Stockbrokers' Association said that the French state-owned bank, Credit National, had received permission to buy a 51 percent stake in Paris stockbroker Dupont Denant SA.

He said both the association and the French Treasury had approved the move. No financial details were immediately available.

Banking sources here and in London said more announcements were likely from domestic and overseas institutions in the next weeks in what many have dubbed "Le Big Bang," a takeover of the London stock market's wide ranging changes last October.

Roger Hornet, head of research at James Capel, said the group plans to take a 30 percent stake in Dufour on Jan. 1, increasing this to 49 percent at the start of 1989 and to 100 percent in 1990.

The broker is one of about 19 medium-sized houses among the 45 Paris-based brokerages being assessed by domestic and foreign banks and institutions eager to gain access to their bourse monopoly, expected to last until 1992.

Capel is present in most major financial centers. It said in February it intended to take an 82.4 percent stake in the Dutch brokerage Van Mier, and last month it set up an office in Frankfurt.

Three big French banks announced plans last month to buy Paris brokers. Société Générale, privatized in June, said it would take 66 percent of Delahaye SA, while Banque Nationale de Paris said it would take a stake in Du Bouché, Credit Lyonnais is expected to take a position in Cholet Jean de Depont Gilles & Co.

About half the brokers in Paris are seeking a buyer, not only to enrich partners but to gain access to capital and keep experienced staff, market sources say.

Meanwhile, banking sources and brokers say a new Paris share options market which starts Thursday is likely to attract major interest from financial institutions and foreign investors.

British Telecom Chairman Resigns, Profit Rises

By Warren Getler
International Herald Tribune

LONDON — Sir George Jefferson, chairman of British Telecom PLC, announced Wednesday that he would resign from the newly privatized utility at the end of the month.

His announcement came at a shareholders' meeting in which British Telecom reported a better-than-expected 12 percent gain in profit for its first quarter ended June 30.

The resignation also comes amid a torrent of complaints from customers about the service provided by the British telephone company. But Sir George suggested that the criticism was unrelated to his decision to step down.

"Had it not been for the uncertainties that existed with the general election and the social ownership issue," he said, "I would have wished to have stepped down as chairman last year."

The opposition Labour Party had threatened to resign from the company if it came to power in the national election in June. The ruling Conservatives won the ballot.

A British Telecom spokesman described the chairman's resignation as "a long overdue resignation." Sir George was to be replaced by Ian Vallance, Telecom's chief executive. British Telecom said that its pretax profit

rose to \$561 million (\$913.5 million) for the quarter ended June 30, an 11.8 percent gain from \$502 million in the comparable period in 1986. Revenue rose 7 percent, to \$2.40 billion from \$2.25 billion.

Sir George admitted that the gains were achieved despite "an unsatisfactory level of service" in the first six months of 1987 and a substantial backlog of criticism of our performance.

The company attributed the results to an 8.6 percent gain in the number of lines rented and an 8.3 percent rise in revenue from calls.

Consumer groups have claimed that British Telecom is increasing its profits at the expense of customer services. They have complained of chronically crossed lines, poor maintenance, alleged overcharges and difficulty in seeking financial redress with the utility.

John Taylor, a telecommunications analyst with the London brokerage Kleinwort Orielson Securities Ltd., said that the challenge facing British Telecom was "to move from being a bureaucracy to a technology-driven business."

Referring to the chairman's resignation, Mr. Taylor said, "Sir George was one year over his age anyway."

"What the new chairman's got to do over the next 10 years," he said, "is get rid of 100,000

Currency Rates

Cross Rates	1 Sept.	2 Sept.	3 Sept.	4 Sept.	5 Sept.	6 Sept.	7 Sept.	8 Sept.	9 Sept.	10 Sept.
American dollar	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
British pound	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
French franc	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
German mark	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
Italian lira	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
Japanese yen	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
Swiss franc	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
Spanish peseta	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
Portuguese escudo	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
Belgian franc	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
Dutch guilder	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
Australian dollar	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
New Zealand dollar	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
South African rand	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
Israeli sheqel	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
Israeli new sheqel	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
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Israeli new sheqel	1.581	1.582	1.583	1.584	1.585	1.586	1.587	1.588	1.589	1.590
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CURRENCY MARKETS

Dollar Advances on Short-Covering

LONDON — The dollar revived Wednesday in late trading, buoyed by nervous short-covering ahead of Friday's U.S. trade figures for July. Currency rates already reflect expectations of a trade deficit of around \$16 billion, dealers said. But any traders who speculatively sold dollars they did not yet own after talk that the trade gap could reach \$20 billion were now closing out these positions.

London Dollar Rates

Currency	Rate	Change
Deutsche mark	1.790	1.790
Swiss franc	1.485	1.485
Japanese yen	141.55	141.55
French franc	6.55	6.55

ahead of Friday." He added that thin trading volume tended to exaggerate the upward move. Dealers said they did not notice much central bank intervention in the open market after Tuesday's

coordinated dollar support by European monetary authorities. In London, the dollar closed higher at 1.790 Deutsche marks, after 1.7920 on Tuesday, and only slightly lower at 141.55 yen from 141.65.

GATT: As U.S. Fights to Revive the Free Trade Code, Many Say Reality Has Killed It

(Continued from first finance page)

De Clercq Likens Disputes To Protectionism of 1930s

MOUNT FUJI, Japan — Current protectionist pressures are potentially as dangerous as a wave of restrictive trade laws that contributed to the start of World War II, the European Community's external affairs commissioner said Wednesday.

Mr. De Clercq said that the protectionist mood in the U.S. Congress could trigger disaster. "If in the U.S. the camp of happy protectionists succeed in pushing through the draconian measures they are clamoring for, then quite obviously such measures would fall most heavily on Japan," he said.



Willy De Clercq

An even bigger wave of Japanese exports would then descend on the EC, he said, increasing protectionist sentiment there. But Shizuma Kojima, Japan's vice minister for international trade and industry, said that the trade disputes ultimately could prove constructive.

"Some have likened this to a war," he said. "I do not agree because war is destructive, while trade friction can be constructive as long as the main blocks to a balanced expansion of international trade can be removed."

a member country should treat its trading partners in a non-discriminatory fashion, a concept known as Most Favored Nation. But that does not rule out trade restrictions.

"Korea may be restrictive toward Canada," he noted, "but it can comply with MFN rules by treating the United States the same way. In other words, under GATT, a restrictive country can be restrictive to everybody."

One of the most pervasive problems in GATT is its inability to deal with the agricultural subsidies that have come to dominate world trade. Cases involving such subsidies have been the source of bitter fights between the United States and the European Community, dramatizing both the flaws in the procedures for settling disputes and some very fundamental differences in the way these two major trading partners view GATT's role in GATT.

"GATT is not a court of law, it is 94 countries with sovereignty," said Sir Roy Dennis, a veteran trade negotiator who heads the Washington delegation of the European Commission, the EC's executive body.

But Mr. Yentzer said that GATT must find a more rapid and decisive way of settling trade disputes if it is to survive. "The EC always wants a binding court," he said. "I've been telling them that we don't have 10 to 12 years to reach a consensus on disputes that we will be provoked by the businessmen of the world as a force and that GATT will lose its credibility as an institution and die."

Australia, which has no export subsidies on its agricultural products, has joined Canada, Argentina and 11 other nations in leading a fight within the GATT to halt all agricultural subsidies.

Sumita Says Central Banks Backed Currency Cooperation

TOKYO — Central bank governors reaffirmed their determination to cooperate to stabilize exchange rates when they met in Japan earlier this week, the Bank of Japan governor, Satochi Sumita, said Wednesday.

Officials from West Germany and Japan have recently confirmed that agreements on approximate dollar trading ranges emerged from discussions earlier this year on currency stability. These talks were highlighted by the so-called Louvre accord reached in February by six major industrialized countries.

Mr. Sumita said he had told central bank governors that there have been increasingly clear signs of recovery in Japan's economy. The Japanese central bank said the country would continue its current monetary policy while maintaining measures to prevent excessively easy credit conditions from causing inflation. He said other central bank governors consented to this policy.

A change in the U.S. discount rate is among factors the Bank of Japan takes into account, he said.

The belief that Britain might be preparing to enter the exchange rate mechanism of the European Monetary System was also depressing the currency, as membership could limit its upward potential. In New York at midday, the dollar was containing the European trend, and traded at the day's highs.

After breaching resistance at 1.7950 DM, the dollar was trading at 1.7975 DM, up from 1.7950 on Tuesday. It also edged higher to 141.62 yen from 141.55. In earlier European trading, the dollar was fixed roughly unchanged in Frankfurt at 1.7928 DM from 1.7930 on Tuesday, and in Paris at 5.9995, just down from 6.0005.

In Zurich, the dollar closed lower at 1.4840 Swiss francs, after 1.4857.

Wednesday's OTC Prices
NASDAQ prices as of 3 p.m. New York time.
Via The Associated Press

Table with 4 columns: Symbol, Price, Change, Volume. Includes various stock symbols and their corresponding prices and changes.

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SPORTS

McNeil Ousts Evert; Graf and Edberg Win

The Associated Press
NEW YORK—Chris Evert was upset by Lori McNeil in the quarterfinals of the U.S. Open tennis championships Wednesday, the first time in 17 years that Evert has failed to make the semifinals.

Evert, a six-time open winner and seeded third this year, bowed by 6-3, 2-6, 6-4. "I guess that's what happens when you get older," said Evert, 32, who lost her service ace in the final set. "You have a few more bad days. I felt so flat out there."

It was only the second time in 50 grand slam tournaments that Evert had failed to make the semifinals and the first since she lost to Kathy Jordan in the third round at Wimbledon in 1983.

"I kept the pressure on," said

McNeil, 24. "I kept coming in — and it worked."

Meanwhile, top-seeded Steffi Graf of West Germany defeated No. 5 Zina Stakovic of the United States, 6-4, 6-3. And second-seeded Stefan Edberg and No. 3 Mats Wilander advanced to the quarterfinals by completing victories over nonseeded players.

Edberg beat fellow Swede Svendsen, 6-2, 7-6 (10-8), 6-3, and Wilander beat American Ken Flach, 6-3, 6-4, 7-6 (7-4). Both matches had been suspended by rain on Tuesday — whose only completed match was Helena Sklavova, seeded sixth, defeat No. 9 Claudia Kohde-Kilsch of West Germany, 6-1, 6-3, in a women's quarterfinal. Wednesday's other women's quarterfinals pitted second-seeded Martina Navratilova against No. 8 Gabriela Sabatini of Argentina; the winner will meet Stakovic.

In the men's quarterfinals, Edberg will face the winner of Wednesday's Andrei Chesnokov-Ramach Krishnan meeting. Wilander's next opponent will be the survivor of the match between No. 5 Miloslav Mezir and Australian Mark Woodford.

In two quarterfinal matches Wednesday, No. 6 Jimmy Connors was pitted against No. 13 Brad Gilbert and top-seeded Ivan Lendl was to meet No. 8 John McEnroe.

"I was a little bit frustrated," Edberg said. "It was very difficult because I had a long day yesterday." Said Wilander: "Today I felt like a completely new match."

You had to forget about the two sets yesterday. I think he played better today than I did.

Sukova, who lost in last year's final to Navratilova, was anxious to get in her match with Kohde-Kilsch, an upset winner over No. 4 Hans Mandlikova on Monday.

Sukova came to the open in a slump. After surprising Navratilova in the final of the Eastbourne grass court tournament that serves as a Wimbledon warm-up, she lost to Stakovic in the quarterfinals at Wimbledon.

"Wimbledon was very disappointing. It is impossible to describe how it feels," Sukova said. "I started playing badly when I came to this country. I did not do well in Los Angeles or Toronto."

She wasn't thrilled with the state of her game earlier in this tournament, either. A first-round struggle against Melissa Gurney, which she won 6-7, 6-3, 6-4, only emphasized her troubles. "Last year, I came over here very confident," she said. "This year, it was not so. But I feel better now."

Kohde-Kilsch never got untracked against the hard-serving Czechoslovak. "It was the toughest conditions I've ever played in," she said. "Coming out on the court and waiting for hours, and then the players overhead. And then Helena was scolding me all the time."

A Prodigy May Face Some Basic Training

By Peter Alfano
New York Times Service

NEW YORK — This has been a disappointing year for Boris Becker, the West German tennis prodigy, not so much because he has won only two of the 13 tournaments he has played, but because Tim Lincecum, his business manager, sees no signs of improvement.

"One week," said Lincecum, a cult figure in tennis with his trademark handlebar mustache and sinister stare. "One week I've been happy with him. He played well in France. I don't care if he goes down to No. 15, as long as he builds his game. But he went to the round of 16 without a tennis game. For two years, he has been relying on sheer power."

Lincecum was referring to the fourth round of the current U.S. Open, when Brad Gilbert registered a five-set comeback victory against Becker. Afterward, Gilbert sheepishly approached Becker and offered his hand. They chatted for several minutes, perhaps rehearsing Monday night's match. Perhaps Lincecum was trying to pick up some clues that will be useful in the future.

Becker's triumph was his second against Lincecum this summer. Lincecum does not overlook things like that. He also knows that Becker must re-evaluate his strategy and make some changes in his game.

Winning Wimbledon at the age of 17 in 1985 was a remarkable achievement for Becker, as was his victory at Wimbledon the following year. He rode those victories to a No. 2 ranking, and when the 1986 season ended at the Masters last December, Becker thought he was on the verge of overtaking Ivan Lendl as the best player in the world.

But in some ways Becker's Wimbledon success slowed down the overall development of his game. The power he used to his advantage on grass was defused somewhat on hard courts, and certainly on clay. He has become a one-dimensional player who has all the shots, but simply does not use them.

He is only 19, of course, and still No. 4 in the world, hardly reason for panic. It also has been a traumatic year for Becker, who parted

with his boyhood coach, Günther Bosch, and began asserting himself more. He thought that Bosch, a surrogate father on the road, was stifling him.

Becker did not find a replacement for Bosch, however, and there certainly were times when he had to use some technical help and a shoulder to lean on. Lincecum refused to coach Becker because both are stubborn and single-minded.

Those qualities helped Becker win Wimbledon and handle the enormous pressure of being a national hero. But they have made him difficult to teach as well. "I don't want him to change on the court," Lincecum said. "I want him to mature."

Although Becker grew up on clay, his style is more suited to faster surfaces. Still, the grass at Wimbledon is the only place where a serve-and-volleyer can win without some semblance of a backcourt game. Even the U.S. Open hardcourts demand that a player be able to hit ground strokes until an opportunity to approach the net presents itself.

And because Becker's serve has deserted him this summer, it has made him appear even more vulnerable.

"He needs a baseline game," Lincecum said. "He needs 50 percent of what Lendl has. The serve will come back."

There are three months remaining until the Masters, the last major tournament of the year. What Becker should do is probably take some time off and then go back to school — and work on the basics that have been neglected in his phenomenal rise.

"It's been too much pressure," he said after his loss to Gilbert. "Most of it is in the head. But after a while, it will go into your bones."



Becker: The power game isn't enough.

NFL Players Set Strike Deadline

By Irvin Molinsky
New York Times Service

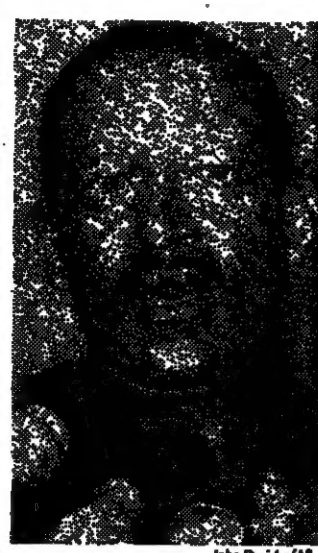
WASHINGTON — The National Football League Players Association voted late Tuesday to go on strike after the second game of the season if a contract was not agreed to by then. That would put the beginning of the strike at the conclusion of the Sept. 21 Monday night game between the New York Jets and the New England Patriots.

"Management left us no choice but to set a strike date," said Gene Upshaw, the executive director of the players' union. Representatives from all 28 teams were here Tuesday, Upshaw said, unanimously favoring a strike if a contract could not be concluded. The vote for a deadline after the second game, Upshaw said, was 24 to 4.

Upshaw said that an offer presented to the players by the league's management committee on Monday represented \$45 million in "givebacks" that the team owners wanted the players to surrender.

"He said the union's detailed analysis of the 'givebacks' would be forthcoming."

Jack Donlan, the negotiator for the owners, said of the strike threat: "It's not unexpected. It conforms to their history. The history of this union is to go negotiations in crisis. They've never negotiated without a strike. Now that we know



Gene Upshaw: "No choice."

what their strike agenda is, what is their bargaining agenda?"

But Donlan did not rule out the possibility of reaching an agreement without a strike, saying he hoped to resume negotiations on Friday. "I anticipate no great delay in resuming meetings," he said.

The current contract, which expired Aug. 31, was reached after a 57-day strike in 1982.

Upshaw did not rule out a deadline extension if the players and owners make some progress toward an agreement. "Jack and I have to work against the deadline," he said. "I know the fans are upset," he added. "They want their game. I want it, too."

The most important issue separating the two sides is how much compensation a team should receive from another team that signs a player who has declared himself a free agent. Currently the cost to the signing team is the player's salary. If a player with three years' experience and earning \$220,000 a year, for example, declared himself a free agent, the club signing him would have to surrender its first and third draft choices the following year.

The players' union says that makes the cost to the new team so onerous that the signing of free agents has virtually halted.

In their latest offer, the owners have proposed reducing the cost to the signing team in that example to a single second-round draft choice. The union has rejected that, calling for the signing of free agents without compensation.

The owners have said they were willing to liberalize the compensation system but will not give it up. The owners have also proposed increasing team rosters from the present 45 players to 47. The union is seeking 49.

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Expos, 3 Games From Top, Play Their Cards Right

Compiled by Our Staff From Dispatches

MONTRÉAL — Playing the top team in their division has brought the Expos to the Montreal Expos. Behind the four-hit pitching of

BASEBALL ROUNDUP

Bryn Smith and Andy McGaffigan, Montreal defeated St. Louis, 4-1, Tuesday night for its fourth consecutive victory over the Cardinals.

The Expos won for the sixth time in 13 starts against St. Louis this season and moved to three games behind the East Division leaders.

Smith pitched three-hit ball for six innings in winning his first start since Aug. 27. He allowed only one leadoff batter — Jack Clark in the second — to reach base. Clark scored the only Cardinal run on a double play ball by Dan Driessen.

St. Louis, which leads the National League in batting average and runs scored, has mustered only 12 hits and three runs in the first two encounters of the three-game series.

Game 6, Astros 4, in Houston. Mike Aldred's two-out home-lead off double in the ninth boosted first-place San Francisco's lead to 9½ games over the Astros in the West.

Game 5, Padres 2, in Atlanta. Pete Smith limited San Diego to six hits over 9½ innings in his major-league debut, and Dale Murphy drove in all four runs.

Game 5, Phillies 2, in New York. Kevin McCarthy hit a two-run homer in the fourth and scored the decisive run in the sixth.

Dodgers 5, Reds 3, in Cincinnati. Frank Thomas broke an 0-3-3 tie with two hits and three runs in the fourth and fifth innings, leading the Reds to their second victory in 12 games.

Game 4, Cubs 1, in Chicago. Mike Dier and R. Reynolds hit run-scoring singles in the eighth, breaking a 1-1 tie, and Vicente Padua won his first major-league start.

Royals 4, Angels 2, in Anaheim. California, Mark Gubicza ended a personal six-game losing streak and George Brett pitched a no-hitter.

Rangers 12, Athletics 1, in Oakland. California, Larry Parrish homered twice and had five RBIs to lead Oakland's comeback victory.

White Sox 4, Twins 3, in Minneapolis. Gary Redus had three hits, including a two-run homer, as Chicago handed Minnesota only its 23rd loss in 71 home games.

Brewers 6, Blue Jays 4, in Milwaukee. Juan Castillo, Robin Yount and B.J. Surhoff drove in two runs apiece as the Brewers snapped Toronto's six-game winning streak.

Mariners 7, Indians 6, in Cleveland. Jim Friesley and Domingo Ramos hit two-run homers to help Mike Morgan register his seventh complete game and second shutout of the season. (AP, UPI)

VANTAGE POINT/Thomas Boswell

Anthem Singer Ends an Odyssey

Washington Post Service

BALTIMORE — Most men lead lives of quiet desperation. Jeff Wickstrom sings the national anthem at the top of his lungs from coast to coast at his own expense.

Tuesday night, he completed one of baseball's oddest odysseys. This summer, he's sung the anthem at all 26 major-league parks. He's done it 13 times at home plate in a tuxedo. A dozen times, he's sung along in

kept in good shape that I'll probably sell when I get back home. "I didn't make one cent. And I haven't gotten any singing offers. My dream is to be a professional opera singer. But, realistically, I don't think I will. Robert Merrill's not in danger. Still, I wouldn't trade this summer."

At Shea Stadium in New York, a small group of college boys chanted "Jeff-ry! Jeff-ry!" when he returned to his seat after his swift but robustly classical rendition of the anthem. "People appreciate not hearing all that pop garbage," Wickstrom said. "I liked Jack Nicholson at the World Series. So often the anthem is just butchered."

At Candlestick Park, San Francisco Giant star Willie Clark introduced himself and shook Wickstrom's hand in congratulation. No other player said a word all summer. But one was enough for Wickstrom, a Giant fan for 25 years.

That day, the crowd stood and cheered as he walked up the aisle to his seat. "My wife was in tears," said Wickstrom. "She'd never experienced anything like that. Well, neither had I. We met in the chorus of 'Aida,' right on stage. . . . Luckily for me, she understands the singer's crazy desire to perform."

Who doesn't want to step out of the chorus? But how many find a way?

Wickstrom did it out of annoyance, after hearing an especially awful anthem at a minor-league hockey game two years ago. "I called the team and said, 'I sing in the Seattle Opera chorus. I know damn well I can do better than that.' They said, 'Can you do it tonight?'"

He turned to his seat after his swift but robustly classical rendition of the anthem. "People appreciate not hearing all that pop garbage," Wickstrom said. "I liked Jack Nicholson at the World Series. So often the anthem is just butchered."

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